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World Population

SOME PROBLEMS AND A DILEMMA

By SIR E. JOHN RUSSELL

One of the greatest differences between the world of today and that of my early youth lies in the outlook on the future. We young people were optimists; full of admiration for the progress mankind had achieved during the lifetime of our parents, and confident that it would continue onward and upward for ever. It is impossible to convey any adequate idea of our all pervading sense of complete security. We had an Empire "on which the sun never set," an incomparable navy that would keep our shores inviolate and enable our merchant fleet to deliver everything we needed to import. No war in our recollection had ever disturbed the smooth course of our lives; occasional outbreaks necessitated military action, but they were far away in regions of which we knew little or nothing, and our chief interest in them was usually the firework display that marked their inevitably successful conclusion. The present was happy enough but the future promised to be even more so: Edward Bellamy's glowing forecast in his *Looking Backward* was like a fairy story on Golden City lines and had a wide appeal: Sydney Webb had advised me to read it when I asked him what the world would be like when we had the socialism he was then advocating. We knew that the world population was increasing, but we shared Isaiah's optimism: "Thou hast multiplied the peoples and increased the joy thereof."

But that has now all gone: in his interesting articles in the first two issues of this journal Sir Charles Darwin draws only "depressing conclusions" from the increase, in particular the probability that the world may relapse into the hard conditions of Natural Selection. This, after all, is Nature's way, and it has prevailed over large parts of the world all through the ages until recently. The Second World War was the chief factor in bringing about a change. It drastically curtailed food production and supplies in many countries, and reduced a large part of the world population to a deplorable state. After it ended the advanced western countries recovered more rapidly than some of the others and began to operate the charter of human rights drawn up during the war by President Roosevelt and Mr Winston Churchill, including freedom from want and disease. The high child mortality

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shocked the consciences of the advanced nations and "Save the children" activities made an irresistible appeal. Medical services and food production were both stepped up and many more children survived, also adult life lengthened; an explosive increase in population set in such as the world had never seen before.

In itself the consequent crowding would probably not have created serious trouble: man's gregariousness makes him very tolerant in this respect. But the question of food supply is more serious: the saving of a life may take only a few hours of medical care, but the husbandman has to provide the survivor with somewhere about his own weight of food every five weeks of his life. This requires even more effort than at first sight appears, for most of the food is harvested only once a year and has to be stored: it is then liable to attack by many pests and even in good conditions the losses are estimated to be of an order of ten per cent, and often indeed are considerably higher. In the race between food production and population increase the husbandman is handicapped by the circumstance that success in any one year increases his task in succeeding years by saving more lives which later on generate still more lives and so on indefinitely. It is as if he were running a race in which a new competitor continually springs up a lap ahead.

The advanced western peoples solved the problem by lowering their birth rates and devising systems of agriculture that are capable of expansion. Food production has thus kept pace with population increases and in some cases has done more, so that surpluses have been produced which the world markets could not take, the disposal of which has at times caused considerable difficulties. At present most of the undeveloped countries still have high birthrates but not an expanding system of food production; each has developed its own native methods which its husbandmen understand and can operate. During the colonial regime the British, Belgian, Dutch and French Governments set up agricultural research stations in the countries associated with them to discover practicable ways of improving the systems, and instructors were trained to show how they should be operated. In general the improvements followed the classical western lines: better cultivations, use of fertilizers, improved varieties of crops and breeds of animals, irrigation, control of pests and diseases, and where practicable introduction of new and more rewarding crops. These have had considerable success and the result has been that up to the present the husbandman has caught up with the wartime deficiencies and has been just about keeping pace with the increase in world population: during recent years this has averaged about 1·6 per cent per annum while increases in food

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production have ranged from about 5 per cent in the very good season of 1958-59 to about 1 per cent in the poor season of 1960-61. But already there are indications of falling off; about one-tenth of the earth's surface is cultivated, and while this is steadily increasing it is not keeping pace with the rate of population increase: it went up by 8 per cent during the period 1951 to 1959, but the world population rose by 20 per cent.

There are special difficulties in the way of increasing food production. For the great majority of mankind this is carried out by peasants, mostly uneducated though often very shrewd, operating in a small way and with limited resources traditional systems which they know will produce food, and which moreover are self contained in that the appliances needed can all be made and maintained by the local craftsmen; little if any capital is needed. On the other hand, some of the products required by world markets and industry such as rubber, cotton, tea, certain vegetable oils, often fare better: they must conform to definite standards if they are to be readily accepted, and they are commonly grown in large plantations under skilled supervision and scientific control. Only in communist countries is anything similar attempted for food production, and so far as can be gathered no great success is attained. The only independent Communist country, Yugoslavia, abandoned collectivisation early and reverted to peasant production. The reasons for this lie deep in primitive human nature: they include attachment to a mode of life and a particular plot of land which we have long since lost, reluctance to abandon a system that has served the tribe for as far back as tribal memory extends, and unwillingness to embark on practices of which the witch doctor and the village elders disapprove.

The greatest trouble is that modern more efficient and expansible methods are likely to necessitate a complete revolution in the way of life. This happened in our own country. Our old open field system had served for something like a thousand years, but by the time of the first Queen Elizabeth it was beginning to prove inadequate to feed our population of about four millions. Had fertilizers, better varieties, pest control agents and other improvements been known the output could, no doubt, have been doubled or trebled but the possibilities were limited. Then in the 17th and 18th centuries a new system, Mixed Husbandry, was developed; it was not only more productive but proved capable of constant improvement, which is still continuing. On the open field system yields of 5 or 6 cwt. of wheat would be not uncommon; on the Mixed Husbandry system in its earlier forms they rose to about 15 or 16 cwt.; later improvements have raised the average to about 26 cwt. at the present time, but good farmers expect about 40 cwt.

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and are thinking hopefully of 60 cwt. per acre. Even this is not the limit, already on one occasion a yield of 70 cwt. has been obtained.

A similar transformation is being attempted in Kenya. On the traditional system the land belonged to the tribe, but each member had the right to cultivate a certain specified area. On his death the next of kin inherited the land and parcelled it out among themselves: a daughter on marrying transferred her rights to her husband, while a son marrying acquired the rights possessed by his wife. The result is a complicated land pattern very difficult to operate satisfactorily; a man may have 20 acres in 30 or more separate plots widely scattered. The traditional tool is the hoe. The first operation, the opening up of the soil, is done by the men, the later operations, sowing, harvesting, etc., by the women. The hoe is an accommodating tool: the plots need have no definite shape; in fact they are often very irregular in outline. But the improved system is entirely different. The chief implement is the plough, and it requires the holding to be all in one place and rectangular in shape: the nearer to a square the better. Also it must be worked by a man. Much exchange of land is necessary, involving the giving up of plots that have long been held by the family, and this the peasant always dislikes. There is also a firm belief that the land received in exchange is not as good as that given up. These and other troubles normally make the process of consolidation of the holdings very difficult and slow.

The Kenya Government, however, had to take certain compulsory powers during the Mau Mau troubles and they were thus able to introduce the improved method in some of the Kikuyu villages and to direct the operations. The results were so satisfactory to the cultivators that neighbouring villages asked for consolidation of the holdings and instruction in the new methods; till recently the movement was spreading more rapidly than the Agricultural staff could operate it. The new methods include rotations of crops for home use and for market, thus supplying the womenfolk with cash to purchase some of the desirable things the Indian traders are carrying into the remotest villages. On my last visit I heard of a missionary who declared that he had often been in parts of Africa where the Gospel had never been preached, but never anywhere where you could not buy a sewing machine on the hire purchase system.

The social consequences of the new system will, however, be revolutionary. The village will be no longer a self contained, self sufficing unit: the appliances needed cannot be made by the local craftsmen but must be produced by highly organised industries located for convenience in towns. The land will no

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longer be owned by the tribe but by the individual cultivator, who may sell it, but only to a fellow tribesman: fragmentation and scattering of holdings are not permitted. It is recognised that this involves the creation of a landed and landless class and as the improved systems require far fewer workers than the old many of the landless will become redundant in the village. Industries must be developed to provide them with work and new industrial cities must be established. The advanced countries will be called upon to provide much of the capital needed and also a share in the world markets.

Already Nairobi has made quite a promising start. Kenya has no gold, diamonds, metallic ores or other valuable minerals to export, but enterprising British and other firms have started secondary industries that look like solving the economic problems of the landless if left to develop in peace. But the social problems inherent in industrial life are also appearing: unemployment, crimes of various sorts, prostitution, and others. Apparently this is all part of the price that has to be paid for the extra food provided by the new agricultural methods. There had been hopes that all this might have been avoided by the development of village industries. Mahatma Ghandi tried to establish them in India with but little success.

An inevitable result is that the population becomes more and more urban minded and loses interest in food production. The necessity for conserving good farm land may be recognised as a general principle, but encroachment continues in advanced countries and erosion in those undeveloped. Other interests come first. Even in some of the hungry countries where increased food production might be regarded as the outstanding problem the native politicians show little interest in it. Indonesia is buying armaments although Java is one of the most densely populated regions in the world and is rapidly developing a Malthusian situation. Appropriate education widespread is needed; considerable efforts are being made, but the supply of teachers will long present difficulties.

These are some of the problems that have already arisen in connection with the feeding of the world population. They will almost certainly become more difficult, and their solution will require much careful study and the provision of considerable funds. If as happens now the advanced western countries are called upon to bear most of the external burden they will have a much harder task than has fallen to us. They may be less able to bear it. Increased taxation for home purposes and steady deterioration of the currency may reduce their ability to provide money for other countries, and changes in the character of their populations may

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reduce their ability to find good solutions of the problems involved. The medical advances that raised the hunger problem in the undeveloped countries have aged the populations of advanced countries. Twenty-five years ago there were in England and Wales about one million persons over the age of 75; now there are about two million, and accumulation of the aged is likely to increase, intensifying among other problems the perennial one of paying for their increasing pensions. Increases are also likely in the proportions of mentally, morally and physically unfit and who years ago would have died early but are now saved by medical science without, however, being transformed into normal, healthy citizens; they become a permanent charge on the community.

There is also a very real danger of genetic deterioration as a result of the higher rate of increase of the XYZ end of the population compared with that of the ABC end, favoured by present domestic policies. Already there are warning signs in the increase of juvenile crime and sexual laxity in spite of the best efforts of our increasingly expensive educational system.

It would be easy to draw a very gloomy picture of the future prospects of the human race. But it would not necessarily be a true one. Dean Inge who was by no means a rosy optimist used to say that things rarely turned out as badly as had been feared, and agricultural history provides numerous examples of threatened catastrophies being averted by unexpected discoveries. In the early 19th century there were well grounded fears that Britain's population of about 16 millions was dangerously high: the "hungry forties" seemed an ominous portent. But unexpected developments of steam engineering made possible the remarkable growth of industry in this country and of transport of food from the American prairies, and by the 1880's and 1890's so much food was available that many of our farmers were driven into bankruptcy. By 1896 however the position had changed so much that Sir William Crookes made his celebrated forecast of desperate shortage of wheat by 1930, bringing hunger to millions of people who had never known it. Like a good scientist he propounded a remedy: the application of nitrogenous fertilizers which he showed how to synthesise in indefinitely large quantities from the nitrogen of the air. The forecast was one of the soundest in the whole history of agriculture though the nitrogenous fertilizers would not, in fact, have solved the wheat problem. But in the meantime an entirely new science was developing: plant genetics started off by an entirely unexpected discovery of a scientific paper published forty years earlier by an unknown monk in an obscure journal; also agricultural engineers produced entirely new types of machinery; and when 1930 came

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there was such a glut of wheat on the world market that again many farmers became bankrupt and a new problem was raised: what to do with the surplus. In the Argentine wheat became so much cheaper than coal that on some of the railways it was used to fire the engines. As another example, fears were till recently justifiably felt that the exhaustion of coal and oil when it comes would gravely hamper all production. But a new source, atomic energy, will have overcome the difficulty long before it arises. This finding an unexpected way out of threatened disaster is no new thing in the world's history; nearly 25 centuries ago it was a recurrent theme with Euripides:

"The things that we looked for the gods deign not to fulfil.
And the paths undiscerned of our eyes the gods unseal."

In this sceptical age many would argue that because solutions of vital problems have turned up hitherto it by no means follows that this will happen again.

In the meantime the advanced Western peoples are confronted with a terrible dilemma. Nature's solution of the problem of an expanding population is the law of Natural Selection. The Western peoples urged by feelings of humanity and sustained by the Christian ethic, are deliberately flouting this law thereby asking for trouble—and getting it. The efforts to save the children succeeded, but raised the new problem of world hunger. In so far far as this is solved it raises the still newer problem of unemployment, which is being met by setting up industries in the undeveloped countries. Meanwhile as a temporary expedient unemployed persons from Commonwealth countries are admitted to our country, but this already causes health and housing troubles and will raise others including problems of mixed marriages. For the undeveloped countries the permanent solution would be gifts of manufacturing equipment and places in the world markets that we at present hold. The productive sector of the advanced countries would have to find a large part of the money needed for these and other industrial developments with no certainty of a full refund. As their efforts succeed their overseas markets may slip away from them because of the low wage costs of their new competitors, and as Lord Boyd Orr pointed out some years ago they would be in the awkward dilemma of either losing their present manufacturing supremacy, which enables them to help, or of violating one of the clearest injunctions in our present code of conduct. The position may well be worse than that, for as the advanced populations progressively weaken owing to the increasing numbers of mentally, morally and physically unfit that they foster, and the increasing burden of helping the undeveloped countries, it may happen that those which have been most assiduous in these good

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works find themselves unable to survive in what may be an increasingly severe struggle for existence.

Personally I cannot believe that events will turn out like that. We still cannot see what the future holds; we do not know whether there is a Plan in the Universe or whether events outside our control come about merely by blind Chance. This second alternative is depressing, the first is happier and for many people a better guide to life. Whichever view we take our task is clear: it is to study closely and dispassionately the problems presented by this difficult situation which now threatens us in the hope of finding workable solutions for them as they arise.

BIOGRAPHICAL NOTE

Sir Edward John Russell. Born at Frampton-on-Severn, Gloucestershire, 31st October 1872. Son of Edward Thomas Russell, school-teacher who later entered the Unitarian Ministry. Educated at University College of Wales, Aberystwyth, and Manchester University where he became demonstrator and lecturer in Chemistry. Head of Chemical Department, Wye Agricultural College, 1901-7. Goldsmith's Soil Chemist, Rothamsted Experimental Station, 1907-12. Director of the Station 1912-43, during which time he built up a distinguished staff and took an active part in the development of modern agricultural science. Has travelled extensively in Europe, Africa, North America, Australasia and India, studying the agricultural and food-production problems at the request of the Government Departments and Universities, advising especially on the scientific problems concerned. He is a Fellow and Past Vice-President of the Royal Society, the Royal Geographical Society, the Royal Society of Arts and Royal Agricultural Society, and has been awarded university and other distinctions in a number of countries.

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CLASS ORIGIN OF SURNAMES AND ACHIEVEMENT

By NATHANIEL WEYL

In the pages that follow, an attempt will be made to discover what relationships exist between achievement, on the one hand, and the class origin and other characteristics of British and Irish surnames, on the other. Here, as in previous articles, the measure of achievement is performance coefficient in *Who's Who in America* 1955-57.

Statistically significant differences are present in the American population bearing Irish surnames. The bearers of Irish names of royal origin have an average performance coefficient 20 points higher than other Irish Americans. Since the sample comprises 1.9 million individuals on Social Security rolls (BOASI) and 945 *Who's Who in America* entries, this difference is not explicable in terms of sampling errors.

TABLE I

Class Differences in the Performance Coefficients of American Bearers of Irish Names in WHO'S WHO IN AMERICA 1955-57 (SMITH *equals* 94)

CATEGORY	ENTRIES	BOASI (thsds)	WWA	P.C.
Royal Names[1]	23	909	482	126
Non-Royal Names[2]	12	1035	463	106
TOTALS AND AVERAGE	35	1944	945	115

[1] The Royal Names are the names of Irish kings as listed in the article "Ireland: History" in the 13th edition of the *Encyclopædia Britannica*, except for MORGAN, which is preponderantly Welsh. They are: BRYAN, BRYANT, OBRIEN, COLEMAN, CONNER, CONNOR, McCONNELL, O'CONNELL, O'CONNOR, McCORMACK, DONOVAN, DONNELLY, EGAN, KINLEY, KENNEDY, McKENNA, McLAUGHLIN, McNEIL, O'NEIL, O'NEILL, O'ROURK, McDONALD and O'DONNELL.

[2] The 12 of the Irish names in the sample used to represent the Irish-Americans in previous articles that are not of royal origin: BOYD, BURKE, DUNN, KELLEY, KELLY, MALONEY, McCARTHY, McCOY, MURPHY, RILEY, RYAN and SULLIVAN.

Minority spellings of very common names yield exceptionally high performance coefficients. This applies particularly to the

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addition of a terminal "e," which Guppy terms "an affix usually significant of a rise in the social scale, or as it might perhaps be more correctly expressed, of a transference from the Trade to the Court Directory."[1]

The terminal "e" and other unusual spellings are often regarded as evidence of snobbery and pretentiousness. Thus, Abraham Lincoln was fond of remarking that his wife had been one of *the* Todds of Kentucky and that they spelled the name with two d's although one had sufficed for God.

As a rule the differences between the performance coefficients of the two spellings will vary directly with the commonness of the name and inversely with the ratio of unusual to usual spellings of it.

These differences are almost always hereditary, but we cannot estimate the number of generations separating the acquisition of the unusual spelling from the present. Since spelling became stabilized in the United States around 1800, it is safe to assume that the change occurred, in the great majority of cases, more than five generations ago.

The observed differences between the P.C.'s of rare and common spellings are sometimes overstated because of the Negro element in the population of the United States. The emancipated slaves "seem not to have converted any place names into surnames"[2] and there are no known colored MONTICELLO's or MOUNTVERNON's. They avoided place names, animal names and all occupational names except SMITH. Their usual practice was to use the Christian name of their master, a name denoting color, or else the surnames of whites whom they admired.[3] In the large majority of instances, the Negroes chose the commonest spellings of the commonest names. The distortion effect of the Negro is indicated by the case of BROWN. Barker found that, in a list of 13,000 Negro names, 163 per 100,000 bore this name, whereas there were only 60 BROWN's per 100,000 in the Confederate States Army. Since Negroes comprise 11% of the U.S. population, the BROWN per-

[1] Guppy, *The Homes of Family Names*, London, 1890, p. 18.

[2] Howard F. Barker, "The Family Names of American Negroes," *American Speech*, Vol. 14, pp. 163-174, October 1939.

[3] The choice of heroes is of interest. Four-fifths of all WASHINGTON's in the United States are Negro. Over a third of the HOWARD's are of African descent, this being in honor of General Oliver Otis Howard who was in charge of the Freedmen's Bureau during 1865-74 and hence fed and clothed the emancipated blacks. DAVIS is a very common Negro name in honor of the President of the Confederate States of America, and many are named JEFFERSON, JACKSON and JOHNSON for three Presidents, all of whom had very low opinions of the Negro. By contrast, there are few colored LINCOLN's, SUMNER's or GRANT's.

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formance coefficient of 92 is not fairly representative of the achievement of white bearers of that name. In fact, if we assume that the Negro performance coefficient is, for all intents and purposes, zero, the P.C. for white BROWN's would rise to 125.

TABLE II

Performance Coefficients of Bearers of Common English, Irish and Scottish Surnames as usually and as unusually Spelled

NAME PAIRS	BOASI (thsds)	WWA	P.C.s	RATIOS
Cook	149	52	83	
Cooke	18	19	252	3:1
Clark	275	153	132	
Clarke	33	36	262	2:1
Green	204	77	90	
Greene	61	41	161	5:3
Brown	685	267	92	
Browne	17	33	460	5:1
Thompson*	319	145	108	
Thomson*	14	26	448	9:2
Johnson*	914	249	65	
Johnston*	77	49	151	5:2
McDonald	94	39	97	
MacDonald	31	34	263	3:1
TOTALS				
Common	2640	982	88	
Uncommon	251	238	225	5:2

Color and Type

Considering the fact that the conquering ethnic groups seem to have been lighter in complexion than the conquered in the British Isles and considering the probable positive association of fairness with class, it might have been expected that the bearers

* In these cases the difference is really between Scots and English. Thomson and Johnston are the Scottish variants of these names. But, while this does not support the author's immediate conclusions, they are consistent with his earlier findings on Scottish performance in America.—EDITOR.

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of names meaning *light* would have higher performance coefficients than those of names meaning *dark*. This, however, seems not to be the case.

TABLE III

Performance Coefficients of Names Deriving from Color of Complexion

CATEGORY	NAMES	BOASI (thsds)	WWA	P.C.s
IRISH:				
Meaning Light[1]	5	173	86	117
Meaning Dark[2]	17	584	297	120
ENGLISH:				
Meaning Dark[3]	4	738	299	97
Meaning Red[4]	3	297	179	142
Meaning Blond[5]	3	352	166	111

[1] BOYD, FINN, FLANAGAN, FLYNN, McGUIRE.

[2] CAREY, COYLE, CRONIN, DOLAN, DONAHUE, DONALD, DONNELLY, DONOVAN, DOLEY, DOUGHERTY, DOYLE, DUFFY, DUNN, DWYER, McDONALD, McDOWELL and SULLIVAN.

[3] BROWN, BROWNE, BROWNING and DOWNING.

[4] REED, REID, RUSSELL.

[5] SNOW, WHITE, WHITMAN. The names BLACK and BLAKE were not included because they may mean either black or white.

In the Irish comparison, the names deriving from dark have a somewhat higher average performance coefficient than those deriving from light, but the difference is too small to be significant. The English comparison is vitiated by the fact that BROWN is a very common Negro name and the probability that there are proportionately many more Negro WHITE's than REED's. Thus, the evidence suggests that color and complexion are not significantly associated with performance coefficients where the bearers of these names are of stock originating in the British Isles.

We find that the bearers of names meaning industrious, strong, smart and, for that matter, stupid or deformed, have considerably higher P.C.'s than average. Names derived from personal characteristics have better scores than trades names and the latter in turn do much better than the bearers of names derived from common Christian names. In the third instance, however, the Negro factor exaggerates the real differences.

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TABLE IV

Performance Coefficients of Bearers of British Names Derived from Characteristics, Occupations and Christian Names

CATEGORY	ENTRIES	BOASI (thsds)	WWA	P.C.
Industrious[1]	2	29	37	301
Smart[2]	6	100	62	147
Stupid, Ugly[3]	3	25	15	142
Strong[4]	4	71	72	171
Large, Fat[5]	5	239	127	129
Short, Fat[6]	5	159	80	119
Handsome, Loved[7]	5	189	93	116
TOTALS	30	811	486	140
52 Occupations	52	4948	2221	111
14 Honorific or high status occupations[8]	14	1021	492	111
61 Christian names[9]	61	7046	2718	91

[1] EMERSON, EMERY.

[2] QUICK, SHARP, SHARPE. SMART, SNELL, SPRAGUE.

[3] PURCELL, DOTSON, GEE.

[4] MAYNARD, STARKEY, STOUT, STRONG.

[5] BATES, BIGGS, GRACE, GRANT, LONG.

[6] BASS, BASSET, LITTLE, SHORT, SMALL.

[7] BELCHER, BELL, CHERRY, DARLING, SWEET.

[8] CLARK, STEWART, REED, PALMER, HARPER, REEVES, BURGESS, FARMER, CLARKE, SEXTON, PROCTOR, BOOKER, CARVER, PIPER.

[9] Derived from DAVID, HENRY, JOHN, RICHARD, ROBERT, THOMAS, WILLIAM.

Finally, we have found no evidence that the performance coefficients of the bearers of English names are correlated, either positively or negatively, with original class status.

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TABLE V

Performance Coefficients of Names with Different Class and Social Origin

CATEGORY	NAMES	BOASI (thsds)	WWA	P.C.
Aristocratic or upper class origin[1]*	5	120	72	142
Feudal officers[2]	12	902	528	140
Low status[3]	23	555	329	140

[1] AVERY (noble), AYERS (heir), CHILDS (young knight), CURTIS (well bred), and GENTRY.

[2] BAILEY, BURGESS, CASTLE, CHAMBERLAIN, FOSTER (forester), PARKER (gamekeeper), WOODRUFF (gamekeeper), WARREN (the same), WOODWARD (the same), STEWART and STUART. The last two names may be regarded as either royal or meaning steward. Their transfer from the second to the first category would not affect the conclusion.

[3] AKERS (farmed one acre), BOND (bondsman, peasant), COATES (farmed less than 10 acres), COTE (the same), DAY (cowhand), HEARD (tended animals), HIND (domestic servant), HYDE (lived on as much land as one plow could till), LOTT (lived on allotted land), MANN (servant), MANNING (son of a servant), MERRITT (tenant farmer), PADGET (male servant), PAGE (lowest grade servant), PLATT (worked small plot), PORTER, SHEPARD, SHEPHERD, SHEPPARD, SWAIN (servant), TILLMAN (tiller of the soil), WEEKS (dairy farm worker) and WORKMAN (did day labor for his lord).

Conclusions:

1. The performance coefficients of bearers of royal names are markedly higher than those of non-royal names among Irish Americans.
2. There is a spectacular superiority in achievement of those who use the uncommon, as against those who use the common, spelling of high-frequency British surnames.
3. This is partially, but not mainly, due to the adulterating influence on achievement of Negro name-bearers.
4. English names denoting personal characteristics rank higher

* These names do not, in fact, indicate aristocratic origin at all. They are, in a large number of cases, nicknames. Consequently, the result which the author has ascertained is what we might expect, for the people concerned are of the same origin as the other classes with whom he compares them. On the whole, Mr Weyl's method is confirmed rather than otherwise by this apparent contradiction.—EDITOR.

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than occupational names and the latter are higher than names derived from patronymics.

5. No correlation was found between achievement and the color—or complexion—meaning of British surnames once the Negro element was excluded.
6. Absolutely no association was found, within the general group of English occupational surnames, between performance coefficient and original class status.*

* See the preceding editorial note.—EDITOR

Professor R. Ruggles Gates' Indian Tour

Readers will be interested to learn that Professor R. Ruggles Gates is now back in London, having just completed a prolonged visit to India. During the tour he lectured at the University of Calcutta, at Trivandrum Medical College, at Delhi, Gauhati, Shillong and elsewhere. He and his wife were able to include a visit to Iran where he also lectured.

His active research work on tribals and other people included studies of the Lambara—who were formerly dacoits (brigands)—and the Chenchu, both in Hyderabad State. His programme included work on the hybridisation of the Anglo-Khasis and on other crosses ranging from European-Tamil to European-Panjabi. In north-east India he was able to study the Lepchas, Botias and Tibetan refugees.

Professor Gates received considerable collaboration from the Indian Statistical Institute at Calcutta, as a result of which he had adequate research facilities. In return he was able to assist and advise on work being done in India more effectively than would otherwise have been possible.

We look forward to publishing some of the results of his latest research in THE MANKIND QUARTERLY and in the MANKIND MONOGRAPHS series in due course.—EDITOR.

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Notes on a 'Scientific' Controversy

By A. JAMES GREGOR

The recent controversy which has attended the birth of THE MANKIND QUARTERLY has brought sharply into focus a number of considerations. Had it not been sufficiently evident before this time that human emotions are inextricably involved in questions of race, heredity, nurture, advanced cultural achievement—and their real or presumed interrelationship—the exchanges delivered alternatively by one side and then the other have made that fact manifestly clear. Arguments so loosely formulated, facts so carelessly marshalled, theories so artessly misrepresented, could only be evidence of a serious impairment of reason—the consequence of intense emotional involvement. So frequently do the disputants violate the most elementary etiquette of academic discourse with the basest innuendoes,[1] the gratuitous ascription of the meanest motives[2] and the most irresponsible assessment of personal integrity,[3] that one finds oneself bewildered in the attempt to discover the real issues being debated.

[1] ". . . I'd put any first-year student of psychology up against Professor Garrett in a test of general psychological knowledge and bet heavily on the student coming out ahead." A. Montagu, "Letters to and from the Editor," *Perspectives in Biology and Medicine*, Autumn 1961, p. 134. Does Professor Montagu *really* mean that he would match *any* first-year student of psychology against a man who is Professor Emeritus of Psychology, Phi Beta Kappa, Past President of the American Psychological Association and the Psychometric Society?

[2] "Professor Garrett appears to be attempting to lay a foundation for the philosophy of segregation in education." S. Garb, "Letters . . ." *op. cit.*, p. 136. "Why is it that Garrett and others like him are so anxious to prove the Negro inferior? Quite obviously science and truth are not involved here, except as devices behind the screen of which the true motivations of such persons find expression." A. Montagu, "Comments," *Current Anthropology*, II, No 4, October 1961, p. 326. "Why are Montagu and other equalitarians so anxious to force amalgamation of American Negroes and American whites? For despite all protestations of virtue, tolerance, kindness and what have you, this is their obsessive goal." H. E. Garrett, "The Scientific Racism of Juan Comas," THE MANKIND QUARTERLY, II, No. 2, October 1961, p. 106.

[3] "Garrett has prejudged the evidence; as one who was born and raised in the Black Belt, he *knows* that the Negro is inferior, and he will distort.

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More important than these human-all-too-human frailties is the obvious abuse of scholarship which results as a consequence of rising emotions. So many instances of faulty scholarship afflict the tortured prose of the various polemicists that one is quite at a loss where to begin.

No time has been lost in indicating real or fancied instances of ignorance, misinterpretation or skewed logic on the part of the contributors to THE MANKIND QUARTERLY. Less critical attention, unfortunately, has been directed against those men, often of international reputation, who represent the opposition.

I have tried to indicate elsewhere that one of these men, Professor Juan Comas,[4] could concoct a brochure replete with elementary errors of fact, theory and logic and yet escape censure for over a decade. His most recent contribution to the controversy, " 'Scientific' Racism Again?"[5] while giving commendable evidence of editorial supervision (other than the name Guenther appearing as Gunther hardly a name is misspelled), is heavy with the same errors that crippled his earlier offerings.

For one thing, Professor Comas has an absent minded theory of "legitimations": anyone who believes that there are significant differences between the races is consciously employing biological arguments as a "smoke screen for . . . oppressive aims and policies."[6] If one has a complex question concerning the history of ideas, *i.e.*, such as "How did Aristotle come to the conclusion that some men were by nature free and others slave?"[7] one need but inquire of Professor Comas for an immediate solution. "To justify the Greek ambition for universal hegemony," he tells us "Aristotle evolved the hypothesis that certain peoples are by nature free . . . and others slaves."[8] He delivers the same kind of trenchant analysis of the thought processes of Juan Gines de Sepulveda,[9] who lived in the XVI Century. There really does not seem to be any creditable way to certify these pronouncements. But when we get to more recent times there is considerably more to work with.

Professor Comas tells us with the same confidence he evinces in all his dicta: "Southern thinkers and sociologists [of the ante-

sleight-of-hand, and otherwise deform the facts to suit his argument." A. Montagu, "Letters . . ." *op. cit.*, p. 134.

[4] A. J. Gregor, "Comas' Chapter on Racial Myths: A Review," THE MANKIND QUARTERLY, II, No. 1, July 1961.

[5] *Current Anthropology*, pp. 303-314.

[6] *Racial Myths* (Paris: UNESCO, 1951), p. 11.

[7] *Cf.* Aristotle, *Politica*, I, 2, 1252b, 1-8.

[8] *Racial Myths*, p. 6.

[9] *Ibid.*, p. 7.

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bellum South] developed a complete pseudo-scientific mythology designed to . . . defend this so-called 'special institution' [of slavery]."[10] Now it just so happens that we have enough information concerning these "Southern thinkers and sociologists" to know that Professor Comas could not possibly be more in error. In the first instance the members of what has become known as the early American School of Anthropology were, by and large, not "Southerners" at all. Dr Samuel George Morton, recognized founder of the school, and consistent advocate of racial differences, was a Philadelphian. George Gliddon, an important member of the School and co-author of that notoriously "racist" text, *The Types of Mankind*,[11] was English born and a cosmopolitan. E. George Squier, an equally important member of the School, was a New Yorker. Louis Agassiz, whose insistence on the specific diversity of the races of man marked him a consistent "racist,"[12] was Swiss by birth and a long-time Bostonian. Peter A. Browne, a Pennsylvania geologist and attorney, provided much of the ammunition for the School in their struggle to establish the fundamental and persistent differences between the races. Of all the members of the School only Josiah Nott was a Southerner. In the second instance, Nott was the only man in the group concerned with defending slavery as an institution. Most of the others had no patience with it. Squier wrote that he had a "precious poor opinion of niggers . ." but "a still poorer one of slavery."[13] Morton gave no evidence of any interest in the institution. Agassiz was a firm Northern patriot.[14] In Dr William Stanton's qualified opinion, the only extrascientific bond "which linked many of these men together was not sympathy for Southern institutions but anticlericalism and antibiblicism."[15] As a matter of fact, the defenders of the "peculiar institution" rested their case almost exclusively on Biblical references and could see no value in the obscure lucubrations and mountains of empirical data provided by this odd collection of scholars, world travellers and intellectuals.

But the fact that he was wrong ten years ago does not in the least deter Professor Comas from tendering the same simplistic interpretation of "racism" in 1961. We are told again: "If the people dominated could be shown to be physically and mentally inferior

[10] *Ibid.*, p. 8.

[11] Philadelphia, 1855.

[12] *Cf.* E. Lurie, *Louis Agassiz: A Life in Science* (Chicago: Chicago University Press, 1960), pp. 255-259.

[13] *Cf.* W. Stanton, *The Leopard's Spots: Scientific Attitudes Toward Race in America, 1815-59* (Chicago: Chicago University Press, 1960), p. 193.

[14] Lurie, *op. cit.*, p. 305.

[15] Stanton, *op. cit.*, p. 193.

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to the ruling group, their control by a 'superior race' could be regarded as fitting and logical; hence the rise of 'scientific' racism, devoted to collecting data from anthropology, biology and psychology to support theories of 'superior' and 'inferior' races."[16]

Professor Comas simply cannot believe that a scholar or an experimental scientist could conclude from the available evidence that there are innate differences between the races of man. Such men could only be consciously serving some secret misanthropic purpose. At least the Marxists, who conceive all theory as "partisan," economically motivated, will grant that, by and large, "ideologies" are unconscious constructs.[17] Professor Comas is disposed, it would seem, to out-Marx the Marxists.

All this error and confusion is to be found implicit and explicit in the opening paragraphs of Professor Comas' recent polemic. The next paragraphs are subject to still more serious criticism. In these paragraphs he refers to the now famous UNESCO *Statement on Race*. He tells us that a "group of 14 distinguished anthropologists and geneticists" (there were actually 12,[18] but no matter) unanimously adopted the text,[19] then proceeds to conclude: "Here we find clearly expressed the conclusions at which modern science has arrived concerning race and the interpretation of racial differences"!

The history of Western Science contains, perhaps, no single statement more manifestly presumptuous. That 14 (or 12, or 50, or 200) men could, even if unanimity reigned harmonious, deliver themselves of a conclusion which pretends to be that of "modern science" is a notion so contrary to the very nature of scientific inquiry as to conjure up visions of the Inquisition. Worse than that, Professor Comas neglects to mention the fact that men, in greater number than 14, and as prominent as any on the UNESCO committee, took violent objection to the aforementioned *Statement*, either in part or *in toto* (E. Mayr, K. Mather, G. Genna, C. Coon, R. Summers, C. Stern, K. F. Saller, H. J. Muller, A. H. Sturtevant, R. A. Fisher, C. D. Darlington, H. E. Garrett, C. Gini, F. Lenz, E. Fischer, H. Weinart, S. D. Porteus, to mention but a few[20]).

After having made this pontification, Professor Comas insists

[16] *Current Anthropology*, p. 303.

[17] *Cf.* Engels, "Letter to F. Mehring," *Marx, Engels: Selected Works* (Moscow, 1955), II, pp. 497 f.

[18] *Cf.* C. Gini, "Psychic and Cultural Traits and the Classification of Human Races," THE MANKIND QUARTERLY, I, No. 4, April 1961, p. 240, n. 1.

[19] *Current Anthropology*, p. 304.

[20] *Cf. The Race Concept* (Paris: UNESCO, 1952); also A. J. Gregor, "Racial Differences: A Brief Rejoinder," *Perspectives in Biology and Medicine*, Spring 1962.

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that unless "new facts" are forthcoming no change in the "conclusion" of modern science is legitimate. Of course, since no one will grant his premise that modern science has delivered herself of a conclusion his argument is without merit and its implications stultifying. Worse than that, Professor Comas apparently understands little of theory construction in the natural and social sciences. *Facts* do not provide an intelligible account in and of themselves. It is the *interpretation* of fact that is significant. The enthusiasts of the geocentric universe had the same facts that the Copernicans had—they differed in their respective interpretations. That difference made all the difference.

Having thus confounded, with a disregard peculiar to himself, logic, theory and fact, as well as his readers, in his "introduction" Professor Comas goes on to accord special attention to special facts. Some of these subsequent sections have been dealt with by others[21] and we will occupy ourselves here only with selections which illustrate our thesis that the exposition is labored and confused, giving ample evidence of a general misrepresentation of positions held, selective documentation (in an illegitimate sense) and a capricious choice of authorities. These are serious charges. Let us consider them with some specificity.

With respect to the section on "Cranial Capacity," Professor Comas provides a tedious list of statistics concerning the mean capacity of white and non-white skulls. Such an account is trivial, having no relevance to any serious issue, since everyone in the field is well familiar with them. To indicate that even the most explicit "racists" know them I refer Professor Comas to the Fascist "racist" journal, *Difesa della razza*, which, almost a quarter century ago, gave essentially the same list.[22] If it was not a matter of dispute then, it is certainly not now. Everyone familiar with the professional literature is cognizant of these facts. If Professor Comas is attempting to provide information to those unfamiliar with the literature he should confine his writing to the tabloids rather than trying the patience of his academic colleagues.

The entire section on "Cerebral Structure" is a classic illustration of devious marshalling of fact, the consequence of the conscious misrepresentation of the position of one's opponent. If Professor Comas' point is that it is difficult, if not impossible, to identify the racial provenance of any *individual* brain with absolute assurance then his facts are pertinent. But this assumes that his opponents are contending that every individual brain displays traits

[21] H. E. Garrett, "The Scientific Racism of Juan Comas," *op. cit.*

[22] *Cf.* L. Cipriani, "Razzismo coloniale," *Difesa della razza*, I, No. 2, 20th August 1938, p. 19.

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exclusively characteristic of a specific race. This is simply not the case. It is only necessary to point out to Professor Comas that even the meanest "racists" have not generally argued in such guise. Professor Guido Landra, one of the principal architects of the Fascist "Manifesto of Italian Racism," stated explicitly: "Of extraordinary importance are the variations of the sulcal pattern and convolutions of the human brain, with respect to which there are, in the different races, a *diverse frequency* . . ."[23]

I have selected Professor Landra because he is an express exponent of what, I imagine, all parties will admit to being "racism." If Professor Comas' most obvious opponents have admitted that this is a question of frequencies and not constant differences—the facts Professor Comas has marshalled are simply not to the point. No one, not even the most arrant racist, seems to be arguing the point he is inveighing against. If, as seems to be the fact, the argument is concerned with relative frequencies, then the evidence seems to support the contention that such differences exist. Which is the real point at issue. To cite Professor Connolly, whom Professor Comas has chosen to select as a qualified authority: "As to racial differences no morphological feature was found to be exclusively characteristic of either the white or Negro brain. It would be quite erroneous, however, to conclude from this fact that cerebral differences do not exist between the two races. There is first of all a difference in the frequencies of morphological features in the sulcal pattern such as has been illustrated. . . . The differences in frequencies combined with the other morphological features such as the shape of the brain and the relative size of its parts are of anthropological significance."[24]

Under the heading "Race Mixture" Professor Comas considers Professor Garrett's objection to the "conclusion of modern science" that "there is no evidence that race mixture, as such, produces bad results from the biological point of view."

Professor Comas reports on an admirable number of studies indicating that hybrids are fertile and healthy. This seems to answer Professor Garrett's suggestion that hybrids are "weak." But Professor Garrett, it would seem, is more concerned with the cultural attainments of hybrids (his references to coastal Bahia, the West Indies and Egypt). Professor Comas, in answering but a part of Professor Garrett's contention, *i.e.*, that hybrids are "weak," employs a number of authorities, among them Professors Eugen Fis-

[23] G. Landra, "La razza e le differenze razziali," *Difesa della razza*, I. No. 1, 5th August 1938, p. 15.

[24] C. J. Connolly, *External Morphology of the Primate Brain* (Springfield: Thomas, 1950), p. 258; *cf.* also p. 263.

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cher and Ernst Rodenwaldt, whom he apparently thought creditable. They were suitable to answer Professor Garrett's notion concerning the physical debility of hybrids—are they then suitable witnesses concerning the cultural capacit of hybrids? Professor Comas is discretely silent concerning their judgments in this significant area because both are painfully specific.

Professor Fischer tells us: "Foresight belongs within the realm of intelligence. This is defective. 'Foresight' involves . . . a dedicated will, self control, [the ability] to deny oneself for the present in the service of the future—this is not possible for the hybrid (*Bastard*). They seem to be creatures of the moment. . . . The future is forgotten in the interests of the moment. . . . This defective foresight, coupled with the lack of energy we have indicated gives rise to the phenomenon of giving themselves over entirely to desire. One such tyrannical desire . . . is alcohol. . . . The lack of energy, together with a phlegmatic disposition, unites itself with a defective foresight to produce, often, indolence, a dull laziness (*stumpfsinniger Traegheit*). One can say of these hybrids . . . they could make much themselves, but they are disposed to purchase these things from the white man; they could significantly improve their standard of living but they are indifferent. . . . Finally, imagination, a sense for art, artistic activity, are weakly developed; their speech, tales, songs, life and impulses, morals and usages are devoid of imagination, empty of content and insipid."[25]

Professor Rodenwaldt tells us (with emphasis): ". . . *the ability to achieve and the position enjoyed as a consequence is, without doubt, entirely determined by the greater or lesser portion of European blood.*"[26]

This seems to be the real issue and Professor Comas chooses not to discuss it. He has used these authorities to make his case against a relatively unimportant feature of Professor Garrett's argument. He pleases not to mention that the same authorities do not support his position in the major issue in dispute. If he accepts their judgment in the one instance he should indicate that (1) they differ from him on the more important issue, and (2) why he chooses to neglect their qualified judgment on that issue. If he does neither of these he imparts the impression that he is entering a special plea, that he is being arbitrarily selective, indeed that he might not have even read the books he cites to support his case.

That he is, indeed, capricious in his selection of authorities seems indicated by the fact that he chooses to accept the negative

[25] E. Fischer, *Die rehoboter Bastards* (Jena: Fischer, 1913), p. 295.

[26] E. Rodenwaldt, *Die Mestizen auf Kisar* (Batavia: Kolff, 1927), I, p. 447; also, "Vom Seelenkonflikt des Mischlings," *Zeit. Morph. Anthrop.*, XXXIV, (1934).

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evaluation of one Professor Ina C. Brown concerning a book by Professor Audrey M. Shuey, *The Testing of Negro Intelligence*[27] in order to dismiss it as incompetent,[28] rather than consider the positive appraisal afforded that same book by Professor Emeritus Corrado Gini, President of the Institut International de Sociologie, who, certainly as qualified as Professor Brown, held that the book "because of the abundance of the material collected and objectively reported . . . constitutes a milestone in this area."[29] In fact, whenever Professor Comas is forced to admit the existence of a substantial work of which he does not approve, he dismisses it with a kind of ritual exorcism.[30]

This kind of blighted scholarship has characterized the controversy to date. That it displays such a characteristic is not the consequence of the applied efforts of Professor Comas alone. He is aided and abetted in his enterprise by no less a notable than Professor Ashley Montagu who could make the somewhat startling confession that he "unreservedly" agreed with everything Comas had written.[31] But in considering Professor Montagu's own contribution to the subsequent discussion one can readily understand their mutual accord.

Professor Montagu troops the Australian aborigines into the discussion to illustrate his contention that no significant racial differences in educability exist. He developes the argument in his own inimitable fashion. He tells us he will not use the evidence of "culture-bound tests," but rather "the experience of those who have had abundant opportunities of judging for themselves the mental capacities of non-literate peoples." These observations, he informs the reader, have been "made repeatedly among the Australian aborigines. . . ." Thus he intends to rest his case on anecdotal accounts. And just what are these accounts? He is specific. Even though he has told us that these observations have been made repeatedly, he refers to a tome written by the Reverend

[27] Lynchburg: Bell, 1958.

[28] *Current Anthropology*, p. 309.

[29] *Cf.* C. Gini, Review of *The Testing of Negro Intelligence*, *American Journal of Psychiatry*, 117, No. 10, April 1961, p. 955.

[30] "We mention the work of Carothers [J. C. Carothers, *The African Mind in Health and Disease: A Study in Ethnopsychiatry* (Geneva: World Health Organization Monograph No 17, 1953)] only because of the criticisms of it by Jules Henry who points out that Carothers produces no evidence to prove his assertions, and by J. Victor Monke, who characterizes Carothers as 'a racial determinist . . .'" (*Current Anthropology*, p. 309). Professor Comas does not seem prepared to dismiss the work of Otto Klineberg because Professor Garrett points out that Klineberg produced no evidence to prove his assertions.

[31] *Current Anthropology*, p. 323.

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John Mathew in 1899! Now this seems curious enough. Even though these observations are made regularly, Professor Montagu has recourse only to an anecdote written in 1899. He refers, to give his account in full, to the "quite remarkable but little known fact that in the nineteen-eighties [he means, I presume, the eighteen-eighties] "the aboriginal school at Ramahyuck, in Victoria, stood for three consecutive years the highest of all state schools of the colony in examination results, obtaining *one hundred percent* of marks.'" The italics are those of the reporter, the Reverend John Mathew, who preceded his startling statement with the remark, "In schools, it has often been observed that aboriginal children learn quite easily and rapidly as children of European parents."[32]

If we have reduced the evidence to anecdotes, the least we can do, I would suggest to Professor Montagu, is provide the guileless reader with the *full* account. The Reverend John Mathew does, indeed, say what Professor Montagu alleges, but he quickly qualifies it with the following: "They are very keen observers, of quick understanding, intelligent, frequently cunning, but, as might be expected, neither close, nor deep, nor independent thinkers. . . . While among Europeans the range of mental development seems almost unbounded, with the blacks its limit is soon attained . . . most natives who have been taken in hand to be taught have at best learned to read words of one or two syllables and to write their own names in a very clumsy manner."[33]

Not only should a full account of the anecdotes be provided but I would further suggest that Professor Montagu make appeal to more contemporary sources. I might specifically suggest the contemporary account provided by J. W. Bleakley, Chief Protector of Aborigines, who certainly qualifies as one who has had "abundant opportunity of judging the mental capacities" of the aborigines. His qualified judgment is: "Numbers of cases can be quoted of individual aborigines showing marked ability in special callings. A few notable cases are: the Reverend James Noble, a fully ordained Mission Priest; Muriel Stanley, a fully qualified nursing sister; Ron Richards, for a time champion middle-weight boxer, and others who have filled responsible posts requiring technical qualifications. But beyond this, no person showing outstanding qualities of leadership or initiative seems to have been found."[34] Or Professor Montagu might ponder the statement made by Professor Elkin, certainly a qualified observer of the aborigine,

[32] *Current Anthropology*, p. 324.

[33] J. Mathew, *Eaglehawk and Crow: A Study of the Australian Aborigines* (London: Nutt, 1899), p. 78.

[34] J. W. Bleakley, *The Aborigines of Australia: Their History—Their Habits—Their Assimilation* (Brisbane: Jacaranda, 1961), p. 213.

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in the self-same journal which carried his own remarks: "I cannot at this date . . . point to any full blood aborigine who has adopted our civilization."[35]

Which, of course, leaves us with the remarkable achievements of the aborigines of the Ramahyuck School. Professor Montagu is quite impressed with the Reverend John Mathew's sixty-odd year old account. He refers to it with amusing regularity. Almost thirty years ago, in 1937, he entertained his readers with the same evidence for aboriginal "equality."[36] (Only on that occasion he was apparently embarrassed by the dated reference and refers his readers to a little article by C. E. C. Lefroy which was carried in the *Contemporary Review* of 1929[37] which, in turn, simply referred to the Reverend Mr Mathew's account of three decades before.) What he failed to mention on that occasion and what he has apparently conveniently forgotten in the thirty year interim is that Professor Emeritus S. D. Porteus had, six years before, in 1931, unceremoniously laid the Reverend John Mathew's tale of the Ramahyuck School to rest: "It is true that Mathew records that Ramahyuck School in Gippsland, which was largely attended by aboriginal or part-aboriginal children, held for three years the record of one hundred per cent of marks, an achievement unequalled by any other school in the state of Victoria. This statement has, however, but little significance. . . . At the time of which Mathew speaks, schools were rated on the percentage of promotions from one grade to another. In the Ramahyuck School there were probably only the lower grades and the standards governing promotion may have been very low. Whatever the explanation of the situation, the inference that the aboriginal children excelled the white children of the rest of Victoria in scholarship is, of course, ridiculous."[38]

But even granting that what Professor Montagu says is not simply devious cropping of an anecdotal account and ignorance of fact, we are still left with an engaging anomaly. Professor Montagu is firmly convinced that the socio-economic condition in which a people find themselves will reflect itself in their achievement. In this way he explains test score differences, differences in achievement between the Negro and white in the United States. Yet

[35] *Current Anthropology*, p. 317.

[36] Montagu, *Coming into Being Among the Australian Aborigines* (London: Routledge, 1937), p. 11. The story crops up again in Montagu, *Man's Most Dangerous Myth: The Fallacy of Race* (New York: Columbia, 1945), p. 113.

[37] C. E. C. Lefroy, "Australian Aborigines, A Noble-hearted Race," *Contemporary Review*, CXXXV, 1929, pp. 222-3.

[38] S. D. Porteus, *The Psychology of a Primitive People: A Study of the Australian Aborigine* (London: Arnold, 1931), p. 380.

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here we have a compelling instance of a people living under the most doleful conditions, under overt and covert pressure from their white neighbours, suddenly out-performing all the white children of the whole of Victoria who enjoy all the environmental benefits of a dominant people. Professor Montagu has certainly given us food for thought.

Before closing this perhaps too long enquiry into the anatomy of a "scientific" controversy it seems necessary to presume further on the reader's indulgence in order to attempt to clarify some remaining considerations. One has to do with the term "racist." Professor Comas seems to think that most "geneticists, psychologists, biologists and anthropologists" are all agreed in the knowledge of what "racism" entails. Being none of these I can only wish that Professor Comas had not referred me to them because he has not indicated to whom, precisely, I should go. Professor Emeritus S. D. Porteus, a psychologist of international reputation, tells me that a "racist" is one who believes that "differences do occur between racial aggregations . . ."[39] If I supplement this stipulative definition with Professor Montagu's revelation that in his "thirty-five years of reading on the subject [he has] not more than once or twice encountered a writer who claimed that 'the races were equal in mental abilities' . . ."[40] it would seem that everyone concerned with the problem (with the exception of the one or two individuals Professor Montagu has not identified) is a "racist."

Professor Wiercinski, however, is quick to disabuse me of this conclusion. He tells me that "racists" are those who "assume the existence of highly significant differences in mental characters connected with cultural capacity of different human races, and who recognize them as a leading factor in the history of mankind. . . . But this does not mean that all anthropologists who believe . . . in correlations between types of psychological reactions and units of racial classification should necessarily be called racists."[41] Since the apparent distinction is a quantitative one, and no objective scale is offered against which to measure, the distinction between "racists" and "non-racists" seems to be intolerably vague and arbitrary.

The only alternative Professor Comas offers is a stipulation defining more precisely his "racists." To supplement the secret knowledge possessed by "most" geneticists, psychologists, biologists and anthropologists, he tells us that Professor Gates is a "racist" because of his "conclusions and interpretations concerning a polyphletic explanation of hominid origin as well as his studies of race

[39] *Current Anthropology*, p. 327.

[40] Montagu, "Letters . . ." *Perspectives in Biology and Medicine*, Autumn 1961, p. 132.

[41] *Current Anthropology*, p. 333.

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crossing."[42] A "racist" then, according to Professor Comas, is a polygenist who studies race crossings (in a manner which does not have the approval of Professor Comas) whom most geneticists, psychologists, biologists and anthropologists can intuitively identify. If Professor Comas can do no better than that, I respectfully suggest he abandon the use of the word which, at best, is ill-defined, tendentious and more calculated to obscure than clarify issues.

Professor Comas implies throughout his work that in order to accord human dignity to an individual (of whatever race) we must first somehow "prove" him to be our biological equal. One would have to be an incredibly naive ethical naturalist to conceive such to be the case. Professor Dobzhansky rightly objects: "Human equality is not predicated on genetic identity, or even on identity of ability; its ideal is not making people identical but giving them an equality of opportunity. It is absurd to think that only identical twins can be equals. To imply that recognition of genetic diversity might justify racism is to justify it. . . ."[43]

This point was made a decade ago, by Professor W. Landauer,[44] in the course of the original criticism of the UNESCO *Statement on Race*, and even Professor Montagu recognizes the absurdity of Professor Comas' implications.[45]

Finally, postures like that assumed by Professor Comas lead presumably competent scientists to make statements as irresponsible as, "In our modern times hardly any anthropologists would wish to contend that there are any physical differences between Whites and Negroes,"[46] to which Professor Dobzhansky can only remark: "To contend that mankind is not a polytypic species differentiated into races of various orders is to give racists an opening for an easy debating success."[47]

The current discussion concerning race and racial differences has precipitated a spate of articles, replies and rejoinders, some not entirely without import. Most significant, I believe, is the fact that the bulk of material, distilled of the exaggerations, distortions, misrepresentations, errors of fact and interpretation, indicates that there exists, among qualified experts, a legitimate difference of opinion. If one could confine oneself to discussing issues and not personalities, facts and not conjectures, theories and not crotchets, science could only benefit from the free exchange. But if one seeks these things, competent discussions of issues, facts and theories, the works of Professor Juan Comas are not highly recommended.

[42] *Current Anthropology*, p. 335. [43] *Current Anthropology*, p. 316.
[44] *The Race Concept*, p. 19.
[45] Montagu, "Letters . . ." *Perspectives in Biology and Medicine*, Autumn 1961, pp. 134 f. [46] P. Boev, *Current Anthropology*, p. 315.
[47] *Current Anthropology*, p. 316.

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THE SIGNIFICANCE OF THE ANTHROPOLOGICAL APPROACH TO LEPROSY

By R. G. COCHRANE

To the average reader of THE MANKIND QUARTERLY, the title of this contribution would appear somewhat unusual, for I wonder whether the leading anthropologists have ever considered that anthropology may contribute to a better understanding of this most ancient disease, a disease which contains within it a scientific approach, which, up to now, has been almost completely unfathomed? And if we are to understand the intricacies of leprosy, and the reaction of the human organism to the challenge of the Mycobacterium leprae, we must consider the whole history of man; and it is because of the close inter-relationship between the history of mankind and the beginnings and spread of leprosy throughout the nations of the world that I feel certain that by drawing attention to the possible influence of anthropological factors in the better understanding of leprosy a fruitful field of study may be opened up.

It is well known that there are considerable differences in regard to the way the various races of mankind react to the Mycobacterium leprae when introduced into the body. The most consistent variation in leprosy is found in the Caucasian, Mongoloid, Negroid and the Indian races, where it will be seen that the one variable factor, in regard to this complicated problem of the proportion of various types of leprosy in the individual races, is the fact of colour. In an article by Gayre of Gayre, the application of genetics to ethnology was stressed and the importance of genetic factors in the development of colour among the various races of mankind was well illustrated, and because there are racial differences in leprosy which seem to be related to colour, the place of the maximal influence of genetics in the pattern of the disease in any given country will be briefly discussed.

While leprosy has been known for many centuries, in India possibly as far back as 2000 B.C., and also in China, and while leprosy was, in all probability, in Egypt at the time of the Exodus, there is no evidence to indicate that the disease as we know it today was seen among the children of Israel when they were in bondage in Egypt. Tradition has it that leprosy originated from

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the basin of the Nile and Lucretius mentions this in his "de Natura Rerum"; while other authorities claim that the original source of leprosy is to be found in Central Asia, and the cradle of leprosy may have lain in the neighbourhood of the source of the Indus, in the region of the Hindu-Kush mountains. It is claimed that in the Egyptian Papyri leprosy has been described some 5000 years before Christ. Be this as it may, there is no evidence in the Old Testament writings that the disease translated as "leprosy" had anything whatever to do with that which we call leprosy today. It is because of its antiquity, and largely because of its religious association that leprosy has become an emotional subject and has not been given that scientific study which it surely deserves, for in the elucidation of this bizarre disease one must have a working knowledge of many aspects of basic research, from anthropology, genetics, immunology, to neurophysiology. It is, therefore, very important, in trying to study leprosy as a scientific subject, to divorce it from all conceptions or ideas of emotion. Leprosy, for too long, has been in the hands of the philanthropists and idealists, who, quite naturally, were motivated almost exclusively by sentimental and religious ideas and ideals. This does not mean that such an approach is not a worthy one; it simply means that all suffering in relation to mankind can only be fully understood in the light of spiritual factors, but there is no reason to single out leprosy for such special attention from any other chronic disease or acute suffering. In all conditions, which afflict mankind and cause distress, spiritual implications, which are bound to influence such experiences, must be frankly faced.

It is unnecessary to give a detailed account of the medical aspects of leprosy. Suffice it to say that the first accurate description of the disease was probably by the Greek physician Galen, approximately A.D. 150, who described the disease as we know it today under the name of "Elephantiasis Graecorum." It is now generally accepted that it is due to the invasion of certain systems of the body by an organism called the Mycobacterium leprae. This organism was first discovered in the year 1872 by a Norwegian scientist, Armauer Hansen, and it is of interest to note that the Mycobacterium leprae was the first pathogenic organism ever to be found and this discovery initiated the theory that disease could be produced by living micro-organisms. There are certain facts, however, which cause me to believe that the invasion of the human body by the Mycobacterium leprae is not the only factor which results in active disease. For instance, it is well known that a large percentage of the ordinary normal population is naturally immune to the disease. The best illustration of this fact is seen when a husband lives with an infected wife, who

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is in an open or infective stage of the disease, or a wife who lives with an infected husband. In such cases the average chance of acquiring the disease from the affected partner is about 10%. Many authorities have indicated that in addition to the human organism having to be challenged by the Mycobacterium leprae, and the fact of the skin to skin contact being the chief method of infection, there must be other factors which affect the susceptibility of the human tissues. Aycock (1938) considered that genetic factors determined a susceptibility to leprosy. Rotberg (1937) suggested that a certain constitutional N factor had to be present before a person showed a susceptibility to the disease, and it is because it is known that a large percentage of the human race is naturally immune to leprosy (that is, leprosy is just not acquired even though the possibilities of infection are very considerable), that a study of the genetic influences in relation to natural immunity in leprosy would be of very great importance and significance.

Another curious feature with regard to leprosy is its variegated pattern, and if one looks upon leprosy as an almost perfect example of human parasitism, then one has to study the disease in relationship to a host-parasite response. In brief, there are three general manifestations of the disease. (1) Those persons who show no resistance to the organisms and the Mycobacteria leprae disseminate widely through the whole reticulo-endothelial system. (2) Those persons who show an exquisite hypersensitivity and when challenged by the Mycobacteria leprae show such a marked tissue hypersensitivity that the disease becomes naturally healed. (3) Between these two extremes, the first named lepromatous leprosy and the second tuberculoid leprosy, is a large zone, sometimes called dimorphous (or borderline) leprosy, in which, at times, the host has the ascendancy, and, at other times, the parasite. Therefore, in the estimation of the prognosis of leprosy, not only as to the progress of the disease but as to the possibility of subsequent mutilation, it must be looked at in the light of a continuous action and counter-action between the host (the bodily tissues) and the parasite (the Mycobacteria leprae). It is well known that those races which tend to show most exquisite hypersensitivity in tuberculosis are the darker races of the world, and Rich (1944) has mentioned that the Negro races of the world are much more capable of developing this exquisite hypersensitivity than the Caucasian and Mongolian races, and, when one looks at the world pattern of leprosy, it is also found that these types and forms of leprosy which indicate either established hypersensitivity or potential hypersensitivity are most frequently seen in the dark races of the world.

I have already referred to the article by Gayre of Gayre, in

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a recent number of THE MANKIND QUARTERLY, linking the question of racial colour to genetic factors. In this connection it is also interesting to note that one factor, which seems to be common in those persons who most readily develop a hypersensitivity to leprosy, is the colour of the skin in relation to the depth of the pigment. I would therefore suggest to the anthropologist and the racial geneticist that, in co-operation with the leprologist, a most fruitful study of leprosy could be made relating the various forms and types of leprosy to the age of the race in question and the position of the race in relation to anthropological development. I am sure that if a scientific study was made of the clinical signs of leprosy in relation to its histopathology in the various races of the world factors of extreme importance would be discovered, which would not only throw light on the reason for the high natural immunity to leprosy, which is such a preponderant factor in the epidemiology of the disease, but it would also throw considerable light on the whole problem of hypersensitivity in relation to genetic and anthropological factors. Therefore, the reason for my incursion into the field of anthropology is to bring to the attention the great importance of the study of leprosy in relation to anthropology and racial genetics. I trust that readers of THE MANKIND QUARTERLY will be eager to take an interest in this most important subject so that, perhaps, a programme might be mapped out which would result in the initiation of anthropological research in relation to the past and present history of leprosy, and in relation to the different patterns of the disease, which is such a little understood and yet common observation in relation to the world pattern of leprosy.

It is high time that the whole subject of leprosy was stripped of its emotional approach, for in many ways it has handicapped the scientific study of the disease and has resulted in the study of leprosy being largely in the hands of those who are, as I say, motivated by magnificent ideals, but have minimal scientific background. It is true that great advances have been made in relation to the study of deformity in leprosy and orthopædic surgeons, physiotherapists, and plastic surgeons, have made a very great contribution to the subject. It is also true that such an approach could never have been contemplated had there not, today, been a more effective therapy of leprosy. Nevertheless, the whole appeal of leprosy, even from its surgical approach, is based largely on the appeal to the emotions so that money is contributed, quite rightly I must confess, to the *relief* of suffering, but when one endeavours to appeal for funds to integrate leprosy into the general (and thus preventive) stream of medicine one finds that such an appeal has hardly an effective hearing. The fact remains

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that, whereas many orthopædic surgeons from Britain and America and elsewhere are willing to spend months in the study of the orthopædic and plastic approach to surgery, particularly at the outstanding Leprosy Research Unit at Karigiri (in association with the Christian Medical College at Vellore, the American Leprosy Missions and the Mission to Lepers), there are few physicians, immunologists, geneticists, or basic scientific workers, who appreciate that leprosy is one of the most useful hand-maidens in the elucidation of basic research problems. Therefore, if this contribution to THE MANKIND QUARTERLY succeeds in drawing attention to the need to investigate leprosy from the fundamental angle of basic research and to place leprosy into the general stream of medicine, my objective in presenting to its readers this most interesting, intriguing, and little understood subject will have been achieved.

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BIOGRAPHICAL NOTE

Robert G. Cochrane, M.D., F.R.C.P. Born in 1899 in China of Scottish missionary parents. Son of Dr Thomas Cochrane, who founded Union Medical College, Pekin. Was educated at school in England, studied Medicine at the University of Glasgow and St Bartholomew's Hospital, London. Spent twenty years in India, the last sixteen being spent in Madras State. Was Director, Principal, and Professor of Medicine at the Christian Medical College, Vellore. Now Technical Medical Adviser to the American Leprosy Missions Inc., and Adviser in Leprosy to the Ministry of Health, London. Member of WHO Leprosy Panel.

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THE EVOLUTION OF THE PRIMATES

By HEINRICH QUIRING

TRANSLATED FROM THE GERMAN BY H. G. CLASSEN

Although during the last few decades surprisingly many primate remains have been found, especially in Africa, it has not yet been possible to trace human ancestry back to the Middle or Lower Pleistocene, let alone to the Tertiary. This is not due so much to the (usually accurate) physiological classification of the finds as to an inadequate interpretation of geological strata. Thus, G. H. R. v. Koenigswald (1953, pp. 126 and 127) placed *Homo heidelbergensis* in the Mindel (Second) Glacial Epoch, despite adequate stratigraphic data. Such a classification cannot be justified geologically. The lower jaw was lying in the sand of the older middle terrace (high terrace) of the Neckar River. The accompanying fauna, which *Homo heidelbergensis* trapped in pit-falls, comprised the Ancient Elephant (*Elephas antiquus* and *trogontheri*), the Etruscan Rhinoceros (*Rhinoceros etruscus*), Lion, Panther, and Hyena (H. Soergel 1923). These "African" animals cannot possibly have lived on the Rhine during the Second Glacial Epoch, whose glaciers reached to the Lower Rhine. Heidelberg Man, who went about naked and retired at night into trees—nothing is known about cave life—belongs to the second half of the First Interglacial Epoch (H. Quiring 1926 and 1930).

Homo heidelbergensis is not the first man to have left traces in Europe. H. Soergel (1912) designated the pitfall discovered by Fisher in the vicinity of Dewlish-Dorset as the oldest evidence of human hunting in Europe. In that pit, which was dug in Portland limestone and was found filled with sand, there lay crude stones for throwing and striking (eoliths) and bones and molars of *Elephas meridionalis*. Thus far, this "southern elephant" is known in Europe only from the Upper Pliocene. Since, during the second half of the Upper Pliocene when the older main terrace of the Rhine was formed, the Thames was a tributary of the Rhine, man could follow the southern animals he was wont to hunt into what is now England. Moreover, he disappeared with those animals from northwestern, central, and northeastern Europe as well as Siberia during the first three glacial periods.

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Just as erroneously as he classified Heidelberg Man, v. Koenigswald (1953, p. 127) classified the "classical" Neanderthal Man as belonging to the Würm (Fourth) Glacial Epoch. Although, during this last glacial period, man did hold out in central and eastern Europe at the rim of the ice, no Neanderthalian lived anywhere in Europe after the Third Glacial Epoch (H. Quiring 1941-42). J. Bayer has named this the "Mousterian Glacial Epoch" after the culture of the later Neanderthalian; the earlier Neanderthalian lived in the Second Interglacial Epoch. During the last (Third) Interglacial Epoch (Aurignacian-Interglacial), Europe, northern Asia, and northern Africa were dominated by *Homo aurignacensis*, sometimes carelessly called *Homo sapiens*. Only during the last (Fourth) Glacial Epoch (Solutrean-Glacial) was Aurignacian Man replaced by Cro-Magnon Man (*Homo priscus*), and then only at the edge of the ice in western, central, and eastern Europe. The last glacial epoch goes back only 10,000 to 15,000 years, according to the Varved-Clay calculations by de Geer, which have been confirmed by C^{14} Isotope investigations (Libby). The post-glacial epoch [Finiglacial] in northern Europe lasted even until 4700 B.C.

Regrettably, most prehistorians base their ice age divisions on the solar radiation curve of Milankovitch (1938). The curve is founded on strongly divergent radiation calculations by Lagrange, Leverrier and Mitchkovitch (H. Quiring 1949). The prize-winning calculation of the orbital elements of the major planets by Harzer would have offered an unobjectional base. However, it contains an initial error which impairs the results. The calculations of Milankovitch result in only small temperature changes, whereas the four glacial epochs, hitherto established geologically and recently by means of the "sediment plugs" of Piggott's "underwater cannon," assume temperature decreases of 8 to 10 degrees centigrade. These may mostly simply be explained by a coincidence of the maxima of the ecliptic inclination (polar night maxima) with the geological processes intensifying the decreases in temperature: the shutting-off of warmer ocean currents by the formation of deltas. Taking into account the polar night maxima—according to the retropolations of Mitchkovitch—the poles and the neighbouring temperate zones were predestined to experience glaciation 250,000, 95,000, 45,000 and 12,000 years ago owing to strong decreases of temperature in winter (margin of error 10-20%). The seven glacial epochs reaching back 600,000 years assumed by Milankovitch have not been established anywhere on the globe.

If we look at the chronological table—Table II—we see that, in the Paleocene-Eocene, there occurred a separation between the Lemurs (Prosimians), which specialized in insect-rich rain forests

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and night hunting, and the Insectivores which continued to cling to a favourable environment. From the former there branched off in the Eocene not only the Flat-nosed Monkeys (Platyrrhinians) which tended to become herbivorous, but also the *Parapithecidae* which led on to the *Anthropomorpha*.[1] Schlosser already regarded the Parapithecids (*Parapithecus fraasi* and *Moeripithecus markgrafi*), found in Egypt, as descendants of *Tarsioids*. While the Monkeys which in the Oligocene split into Platyrrhinians and Catarrhinians (*Cynopitheca*) confined themselves almost entirely to tree life and therefore did not grow larger than a shepherd's dog, the first Anthropomorphs must have chosen an entirely different way of life. Even if we assume an Oligocene separation of the Catarrhinians, which have, in contrast to the Platyrrhinians, only two premolars like the Anthropomorphs, from the latter, the assertion of Haeckel (1910, pp. 661 to 674) that the Anthropomorphs developed from the Catarrhinians of the Old World cannot be sustained.

At their separation from the Prosimians (Tarsioids) and later from the Monkeys, the Anthropomorphs responded to the changing, less favourable environment by a form of self-help (Timorie) (H. Quiring 1959). (In the Eocene the landscape of Africa, which at that time still belonged to the giant continent Aequatoria or Lemuria (Sclater), turned into prairie). Isolated or separated by great distances from the great forests, they remained in the Savannah. Since our ancestors "first became Men with their legs" (Dames), they traversed the prairie landscape by running erect, or had to assume an erect posture while climbing the individual trees (H. Klaatsch), so that the five-fingered gripping foot was gradually transformed into a running foot and supporting foot. The compulsion to self-help separated the Anthropomorphs somatically from the Prosimians, which remained in, or migrated to, the insect-rich forests, thus escaping from the steadily less favourable milieu through emigration (Ektropie). With the change over to a different way of life and a different type of nourishment (vegetables, and perhaps even meat) by *Parapithecus*, the "Living and thinking molecule" desoxyribonucleic acid (DNA), which is localized in the genes, introduced corresponding hereditary characteristics into the form-determining chromosomes. Thus, the change of nourishment and what was at first only an enforced habit of running erect was transformed into the stage of specializa-

[1] G. G. Simpson (1945, p. 67) latinized the customary designation Anthropomorpha—which originated with Linnaeus (1735) and was confined by E. Haeckel to Primates and Man—into "Hominoidea;" in doing so he singled out as a special family the phylum form *Parapithecus* as against the Primates (Pongidae, hitherto Anthropoides) and Man (Hominidae, hitherto Anthropidae).

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tion and orthogenesis. The question of the endogeneous causes of physical and psychical, but also genetic, processes (actions, reactions, mutations, variations, etc.) has been answered with respect to all living beings; the above-named nucleic acid is the control and regulator (A. Kornberg and S. Ochoa 1946-47).

Only the Anthropomorphs which in the Eocene mastered environmental difficulties through self-help succeeded in advancing further biologically. By reducing external ties or bonds they gained, in relation to environment, greater freedom and mobility, in the main branch upward to Man. For descent means bonds, ascent liberation ("Heraclitus": H. Quiring 1959b).[2] Thus the evolution leading to Man secured a central position (H. Klaatsch).

From the *Parapithecus* of Egypt to the Australopithecines of South Africa the Anthropomorphs rise uniformly upward, if we disregard lateral offshoots. The fact that they were tree-climbers before they "learned to run perfectly" (H. Klaatsch 1902, p. 192) has been confirmed by the Tertiary Anthropomorphs. Thus the Lower Miocene *Proconsul africanus* (G. Heberer 1958) was no swing-climber like today's Anthropoid Apes, but a hang-climber. He, too, ran erect while traversing prairies—in the late Oligocene and the early Miocene a large part of Africa had again turned into prairie. Thus the hereditary characteristics of the erect walk became firmer—characteristics which had been introduced in the Eocene and which influenced, correlatively, the rest of the body build—even though the position of the eyes, nostrils, and the design of the cerebral convolutions of *Proconsul africanus* still resemble those of the Prosimians (W. le Gros Clark and L. S. B. Leakey 1951).

Through the shifting of locomotion to the posterior limbs, the gripping hand, developed by climbing, became free for other tasks beyond climbing, the grasping of food, etc. The Anthropomorph succeeded in making the same type of ascent as that of the Bird in the Jurassic Epoch, which had raised itself above its reptile ancestors by passing over to another way of life through greater versatility (Polypleurie). The erect walk, which was "the decisive step, the precondition for actually becoming man" (G. Heberer 1958), was never again lost by the Anthropomorphs, not even by the laterally developing swing-climbers, like the Gibbon. This is confirmed, in the Tertiary ascendant series, by the Upper Miocene *Dryopithecus germanicus* and the Lower Pliocene *Oreopithecus bamboli* of Toscana. Running and walking, more and more preferred to tree-climbing, transformed the climbing and gripping foot more and more into a running foot.

[2] The word used by the author is "Bindung," which means *tie, bond,* in the sense of connection between one individual or object and another. —TRANSLATOR.

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TABLE I

STIMULUS SCHEME OF PRIMATE EVOLUTION

THE CHANGE IN ENVIRONMENT (COMPELLING CONDITION) WAS

either A. FAVOURABLE (philotrophic) and was	*or* B. UNFAVOURABLE (kakotrophic) and was		
used further, with adjustment (Harmotie), also further specialization	1. eliminated by emigration (Ektropie)	2. balanced by resistance (Antistesie) with development of protective and offensive means	3. not eliminated but negated and overcome through autofunctional substitution (Timorie) of aids formerly rendered by environment.
e.g., during the Eocene through retention of insect food and night hunting by Insectivores and Prosimians	*e.g.*, in the Eocene through withdrawal of Prosimians from Lemuria (which turned into prairie or sank into the Oligocene) to insect-rich rain forest	*e.g.*, in the Pleistocene in the transformation of the canine teeth of monkeys and anthropoid apes to fangs	*e.g.*, since the Eocene by running on posterior limbs and thus freeing the hands for other tasks, as with the anthropomorphs for grasping and using selective tools and weapons of wood, bone and stone; with man, for inventive construction of pitfalls, making of fire and tools; accompanied by brain increase and speech development
e.g., in the Pleistocene through final transition of the Hylobatids to tree life with development of long swinging-arms			
Biogenetic decline: strengthening bonds to environment (Exoaptie); growth of onesidedness (Atelie)	Biogenetic stagnation: remaining one-sided (Persistenz)	Biogenetic inhibition: inner bonds (Endoaptie)	Biogenetic advance: diminution of external bonds; greater freedom *vis-a-vis* environment (Apolysie); increase in versatility (Polypleurie)

Bondage is the way downward, liberation the way upward.—HERACLITUS.

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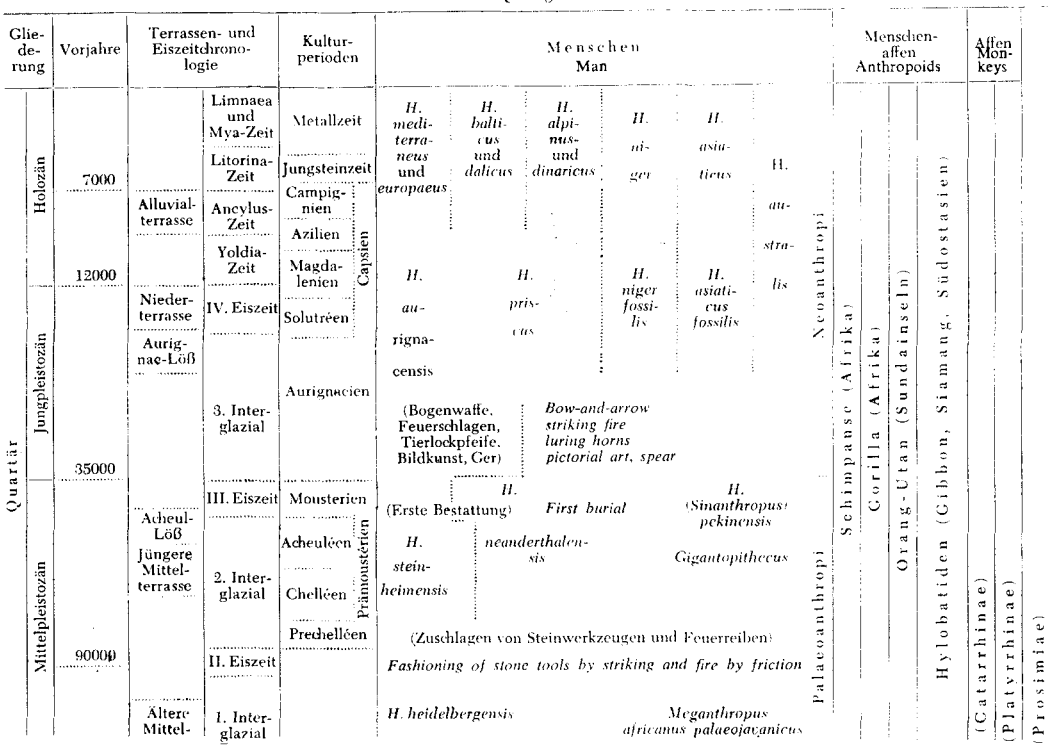
TABLE II

THE PRIMATE EVOLUTION IN THE TERTIARY AND QUATERNARY PERIODS

Tabelle 2. Zeittafel der Primatenentwicklung im Tertiär und Quartär.
Entw. H. Quiring 5. 7. 1959.



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It is doubtful whether the Anthropomorphs split into Man and Ape in the Eocene (Darwin, Broom), Oligocene (Klaatsch, Osborn), Miocene (Wilser, Gregory, Heberer, le Gros Clark), Lower Pliocene (v. Koenigswald), or Upper Pliocene (Haeckel). The search for the "missing link" has gone on for a century.

Since the discovery in South Africa by R. A. Dart, R. Broom, and J. T. Robinson of approximately 100 Australopithecines, found in crevice fills, these have rightly been in the centre of interest, since they exhibit both Anthropoid and Anthropid characteristics. The accompanying fauna would suggest entirely different ages for the hitherto differentiated five species: *Australopithecus africanus* of Taungs, *Australopithecus prometheus* of Makapansgat, *Plesianthropus transvaalensis* of Sterkfontein, *Paranthropus crassidens* with *Telanthropus capensis* of Swartkrans, and *Paranthropus robustus* of Kromdraai.

Australopithecus africanus is usually regarded as the oldest species. He has the diastema, the monkey gap in front of the canine tooth, as in the later Old Pleistocene Anthropid series *Pithecanthropus modjokertensis*. *Australopithecus prometheus* was found in the Makapansgat together with the usually Lower Pliocene *Hipparion*, which in Europe and Africa changes into *Equus* as early as the Middle Pliocene, at the latest in the Upper Pliocene (H. Quiring 1939), not in the Pleistocene, as appears to be the assumption of v. Koenigswald (1953, p. 131). We shall, therefore, have to place the older Australopithecines, in view of their rock and prairie life, in the Lower Pliocene, even though some persistent accompanying animals should have continued on into the Pleistocene.

According to the accompanying fauna, *Plesianthropus transvaalensis*, *Paranthropus crassidens* and *robustus* are later in time, since *Equus zebra* was found in Swartkrans and *Equus kuhni* in Kromdraai. The later Australopithecines probably belong to the Middle or Upper Pliocene.

Judging by the structure of their pelvis, the Australopithecines walked erect. The occipital foramen was more centrally located than that of the modern anthropoid apes. With a height of 120 to 150 cm., the Australopithecines were shorter than normal modern man (165 cm.). Their brain, measuring 450 to 800 cu. cm. (maximum volume of the gorilla brain is 685 cu. cm.), was a good deal smaller than that of modern man. However, even the Lower Pleistocene *Pithecanthropus II* of Java had a brain volume of only 775 cu. cm. It is therefore possible to say that at least the older Australopithecines had not yet separated from the phylum of the Anthropomorphs; they were possibly already in the process of transformation to Anthropoid Apes.

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The Australopithecines preferred to hunt baboons in the rocky landscape with clubs derived from the bones of hoofed animals—tools and weapons by choice and appropriation. Fabricated (*i.e.*, invented) tools cannot yet be proven. They did not use fire; it was hasty on Dart's part to name the species *prometheus* (R. Broom 1950, p. 74). On the other hand, it has not been possible to disprove sufficiently that these creatures were cannibals—a fact deduced from the circumstances of the find. We can scarcely regard this as magical cannibalism (desire to appropriate the mental and physical qualities of the individual that is eaten). Rather, the motives derived from the necessity to supplement the meat diet while living in arid regions. This distinction from other primates continued to be preserved by Man.

Demonstrably, the separation between the Anthropid hang-climbers, who sought only protection in trees, and the Anthropoid Apes occurred only in the Middle Pliocene, when the Anthropoid Apes adapted themselves more closely to tree life and vegetarian food, thus developing into swing-climbers. (This was a time of tectonic activity (Plagiostasie), with the climate becoming damper). At any rate, *Paranthropus crassidens* was already in the process of developing into the Pongid. Although his milk teeth and front teeth, together with the canine teeth, were still entirely human, the back teeth were already becoming pongid. The rear surface of the symphysis had developed the cavity known in the Gorilla (*Fossa genioglossi*). *Paranthropus crassidens* approximated to the Gorilla still more closely through the sagittal crest, which is typically found in adult Gorillas, Orangutans, and Chimpanzees.

The "hominid" found with *Paranthropus crassidens* at Swartkrans and described by Broom as *Telanthropus capensis* is, according to W. le Gros Clark, either a female or a not fully grown *Paranthropus*. The *Paranthropus crassidens* designated by Robinson as a "hominid gorilla" is one of the ancestors of the Gorilla, Orangutan, and Chimpanzee who had just branched off from the trunk of the Anthropomorphs. One may regard *Telanthropus* as a juvenile form, which had not yet specialized; just as the large modern Anthropoid Apes show not only sexual but also large age differences. Thus only the adult male Gorillas, some female Gorillas, most male Orangutans and a few male Chimpanzees show the sagittal crest which is absent on young Anthropoid Apes and female Orangs and Chimpanzees. This shows that the hereditary "sagittal crest" characteristic, present in the chromosome genes since the Middle or Upper Pliocene, could not prevail even with all male Orangs and Chimpanzees, much less with the females. The Australopithecines did not, as asserted by v. Koenigswald (1953, p. 132) "remain stuck in the apish nature." On the contrary,

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they began, while separating from the Anthropids, to change to Anthropoid Apes. Whereas the Lower Pliocene forms had still remained in the main line, the Upper Pliocene *Paranthropus crassidens* struck out on a side path—the "path of degeneration" (Entartungsrichtung)[3] (H. Klaatsch 1902, p. 180). The "branching-off proceeded from a condition which was more manlike" than that of the modern fully grown Anthropoid Apes. In accordance with the Basic Biogenetic Law of Müller and Haeckel, young Anthropoid Apes are closer to the branching-off stage (*i.e.*, to man) than the older forms. *Telanthropus* (J. T. Robinson 1953) as a juvenile form of *Paranthropus* is perhaps the type of the intermediate link. The road of degeneration led to long-armed, short-legged swing-climbers with feet that were only incidentally used for support, it led to the sagittal crest which made possible stronger biting and chewing, to elongated canine teeth usable as weapons. The large Anthropoid Apes sank between the Tertiary and Quarternary into an animal-like nature. Since they became herbivorous, hunting—including that of members of their own species—ceased, and with it cannibalism. The Anthropid retained hunting, war, and cannibalism, and even rooted the latter, driven by fear and superstition, in magic and human sacrifice.

The Gibbon and Siamang, with their overlong arms, did not become animal-like in the same manner as the other Pongids. Their Upper Pliocene ancestor Pliopithecus was still a hang-climber. During the Pleistocene the Hylobatids, like the other Anthropoid Apes, withdrew into the rain forests, adapted themselves even more than the latter to tree life, remained smaller and did not develop the sagittal crest, bearing at least in this respect a closer resemblance to Man.

Abandonment of animal hunting, transition to vegetable food, and confinement to tree life did not offer any stimulus to higher mental activity. Thus, the brain size of the Anthropoid Apes remained nearly constant at 320 to 685 cu. cm (notably the Gorilla and the Orang), despite enlargement of the body. Their intellectual sphere sank (H. Klaatsch). The Anthropoids, on the other hand, having separated from the Anthropoid Apes, did not merely retain their specific brain size which corresponded to the enlargement of the body. They enlarged their brain, even though, like the Anthropoid Apes, they left unimproved, for the time being, their tools (eoliths, bones, twigs, etc.)—whether found, appropriated or selected—and built their nests in tree tops.

I regard the transition to the trapping of large animals

[3] "Entartung" may be understood as a deviation from the norm, but also as a corruption.

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in pitfalls as the most important psychic advance. This may be discerned in the pitfall of Dewlish-Dorset, belonging to the end of the Upper Pliocene, before the glaciations. Although even the Australopithecines in their baboon hunt had operated with a good deal of cunning, the pitfall represented the climax of the cunning hunt. Even today we still say of a duped person that he "fell for it," and we say of cunning deceivers that they "set traps." Even Egyptian hieroglyphics connected pitfall, injustice, and deceit: "grg" stood not only for pitfall and trap-setting, but also for cunning and deceit. It is true that animals also hunt in a cunning manner, but only Man places traps on previously ascertained animal tracks and, for large animals, builds pitfalls constructed by collective labour. The psychic deliberations necessary for this cunning hunt raised Man above the level of other Primates—including the separating Anthropoid Apes—as early as the Upper Pliocene, before the development of an articulated language, the making of fire and of tools. It has also been demonstrated in the Human Species that hunters are not merely more warlike and cunning, but also more mentally alert and versatile than pure planters. The large-animal trap is the first human invention. The planning and reflection which this invention—separating Man and animal psychically—required explains the increase of the brain volume, the relatively large cranial capacity, and the longer growth of the cranium of the hunting male compared with that of the gathering female. The capacity of planning and reflection and the fashioning of new ideas has been retained by only a part of Mankind. Much larger portions, prinicipally in the tropics and subtropics, remained and turned sterile, even though they were successful imitators (H. Quiring, 1930 and 1948).

Whether *Pithecanthropus erectus* made use of fire, which was available to him on the volcano-beset Sunda Islands, is as uncertain as the question whether he was a cannibal. His language cannot have differed much from that of the Anthropoid Apes. One can agree with Haeckel (1910, p. 679) who postulated a *Pithecanthropus alalus*, an ape-man, without developed speech.

Since the discovery of the *tuberculum geniale* (E. A. Hooton, 1946, p. 169) (the *Spina mentalis*), which makes possible the tongue beat (Zungenschlag), on *Homo heidelbergensis* and on the contemporary or somewhat older *Meganthropus palaeojavanicus* —this sign of a human-like articulated speech seems to be lacking in the older Anthropids—we can say that therewith Protoman (Archanthropi) has changed to Ancient Man (Palaeoanthropi). Certainly, the Anthropoid Ape—as many pulmonary breathers from the Amphibians up—can make himself understood through respira-

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tory and expiratory sounds. Thus he may produce sounds not requiring a strong tongue beat, like the vowels and some consonants (b, ch, f, g, h, k, m, p, sh, v). If we divide speech into expressions of: mood and sensation, volition, judgment and representation, it can probably be said that the Anthropoid Ape has at his disposal only the first two groups. He can combine vowels and consonants to make sounds expressing: desire, affection, reluctance, disaffection, pain, rage, terror, warning, defence and enticement, possibly also to designate startling events, but that is not human-type-articulated, judging, descriptive and explanatory speech.

Articulated speech probably became necessary when, after the First Glacial Epoch, desert areas expanded in North Africa as a result of the increasing warmth, and Man followed the animals he hunted to Europe by way of the Iberian and Apennine peninsulas, which at that time were still connected to Africa. How rich in animals Europe had become in the first Interglacial is shown by the fauna of Mauer and Mosbach on the Rhine. More extensive forests in Europe, which was also topographically more diverse than Africa, demanded greater mental activity from the hunter of large animals. More than previously did the construction of pitfalls for Elephant and Rhinoceros require the co-operation of several hunters, circumspection, planning, consultation, and instruction. This co-operation was made necessary especially by the acceleration of pitfall building, since a large animal would have noticed slow excavation. Common labour resulted in a need for communication which transcended expressions of emotion. Above all, the division of labour and the naming of animals——Australian Aborigines living by fishing know and name over 100 sea fish varieties—and of animal anatomy increased the pressure for differentiated linguistic expression. The creation of an articulated language is a form of self-help (Timorie), which arises perforce from necessity, like the erect walk of the Old Tertiary and the bone club of the Upper Tertiary Anthropomorphs. It increased versatility, led to mental liberation, and to a sense of superiority. The strongest and most courageous hunter, even if not the most imaginative, must have asserted himself as "king of the hunt," claiming and defending a hunting preserve. Thus, there arose, beside and above the community of family and clan, the hunting and warlike (kynegetic) monarchy.

Heidelberg Man still remained at the Eolith stage. To scratch out pitfalls he used bone splinters in the manner of a pick. The Second Glacial Epoch had to pass before Man surmounted the Eolithic Period, and during the Pre-Chellean Phase, shaped, by striking and sharpening the edges, handy lumpish stones, which were suitable for the excavation of pitfalls. Thus originated the

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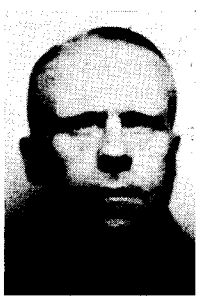
first self-made tool (H. Quiring 1932a) and not much later the fire spindle for making fire.

Cunning, hunting, war, the invention of tools and weapons have raised Primates to Men. We cannot grant a well developed speech either to Heidelberg Man, or to the Second Interglacial types of Steinheim, Grenelle, Swanscombe, Neanderthal, or to the approximately contemporary *Homo* (*sinanthropus*) *pekinensis*, even though their tools—especially those of the Acheulean Phase—were perfect in form, and they had begun to extract flints from shallow excavations (H. Quiring 1932b). Despite speech and the increase in the size of the brain, the hunters, gatherers and tool-makers were still predominantly *Homines fabri*. Only the cannibalism and burial customs of the Neanderthal Man indicate magical-superstitious motives. They probably could not "count to three," as H. Lingroth has reported of the Palaeolithic Tasmanians.

Only after the Third (Mousterian) Glacial Epoch did Aurignacian Man hunt on the Mediterranean, and later also in north-western, central, and eastern Europe and in northern Asia. This clever and versatile type, who invented the luring horn, the making of fire by striking, and the bow and arrow, is the ancestor of the Mediterranean and Nordic races. For purposes of magical witchcraft he created pictorial art, the decimal number system, and also the inflective—originally monosyllabic—language which continues to live on in the Hamitic, Semitic, and Aryan language groups. Other peoples developed agglutinative and isolated languages, and number systems based on 2, 3, 5 and 6.

BIOGRAPHICAL NOTE



Professor Dr H. Quiring. Born Gelsenkirchen, Westphalia, 31st January 1885. Collier Zabrze, Silesia, 1905-6. University, München and Berlin, 1906-10. Royal Bergreferendar, 1910. Dr. Phil., University of Bonn, 1912. Royal Bergassessor; Dr. of Engineering, Techn. Hochschule, Breslau, 1914. Artillery Officer, 1914-18. Member of the "Preuss. Geologische Landasanstalt und Reichsamt für Bodenforschung," Berlin; researches in Germany and foreign countries, 1919-45. Professor, 1929. Member of the Industry Administration, Berlin, 1945-6. Professor of Geology and Paleontology, Technical University, Berlin, 1946. Emeritus, 1955.

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THE MAZE TEST AND CLINICAL PSYCHOLOGY

A Review

BY A. JAMES GREGOR

The author of the above work* will be readily remembered for his incisive studies of primitive mentality and racial mental differences,[1] and although the present text is unconcerned, specifically, with the question of ethnopsychological differences, there is peripheral mention of the value of the Maze in just such empirical studies (*cf.* pp. v, 8 f., 68, 83, 102, 132, 134). This fact, coupled with the express suggestion that the Porteus Maze could be considered a supplementary anthropometric device,[2] warrants an exhaustive review of its application and effectiveness as an experimental performance tool by those interested in comparative racial studies.

In the text under present consideration, Professor Porteus provides a survey account of the available evidence which indicates

* *The Maze Test and Clinical Psychology* by Stanley D. Porteus. Pacific Books, Palo Alto, California, 1959. Pp. 203. $5.50.

1 Particularly: "Mental Tests with Delinquents and Australian Aboriginal Children," *The Psychological Review,* Vol. XXIV, No. 1, January 1917; *Temperament and Race* (with M. E. Babcock. Boston, Badger, 1926); "The Social Psychology of the Australian Aboriginal," *Journal of Applied Psychology,* Vol. XIII, No. 2, April 1929; "Race and Social Differences in Performance Tests," *Genetic Psychology Monographs,* Vol. VIII, No. 2, August 1930; *Primitive Intelligence and Environment* (New York, Macmillan, 1937); "Racial Group Differences in Mentality," *Tabulae Biologicae,* Vol. XVIII, No. 1, 1940; *The Porteus Maze Test and Intelligence* (Palo Alto, Pacific Books, 1950), esp. chapters IX and X.

2 *Cf.* Porteus and Kleman, "A New Anthropometric Approach," THE MANKIND QUARTERLY, Vol. I, No. 1, July 1960.

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precisely what the Maze Test measures. Contemporary studies of lobotomized patients (operates in whom a large proportion of the nerve pathways connecting the frontal cortex with the thalamus and hypothalamus have been severed), those subjected to topectomies (ablations of the cortex) and venous ligation (restricting cortical blood circulation), provide considerable presumptive evidence, as assessed by postoperative Maze Test results, that such brain damage seriously impairs foresight and planfulness (*cf.* pp. 3, 10, 39 f., 47, 62), the ability to delay choice until alternative courses of action are assayed through "imaginal trial and error" (*cf.* pp. 41, 46 ff.), and a general "disinclination to work at [one's] usual level" (Landis and Zubin, as quoted, p. 50).[3]

Because the Maze has given evidence of its effectiveness as a test of elementary planning capacity it is perhaps one of the more efficient tools in the study of primitive peoples whose lives, however innocent of literary and scholarly achievement, require the exercise of planning and foresight. Whatever else standard IQ tests measure, they do not measure this critical segment of intelligence. The standard "intelligence" tests, when applied postoperatively to patients suffering extensive brain damage, failed to indicate any significant deficit in test results (*cf.* pp. 53, 71 f.) which revealed, not that the subjects who had suffered standardized local lesion of the brain, suffered no functional impairment, but that the tests failed to measure that impairment. The Maze Test, on the other hand, has proven to be a particularly sensitive test of such reduction of performance.

Since the Maze has proven so effective as a test of elementary planning ability its serviceability as a research tool with respect to primitive peoples is almost assured. Primitives, having little, if any, familiarity with the dispositions fostered by literate scholarship and study, are (1) singularly handicapped when examined by tests standardized for the study of literate societies, and (2) more often as not display a marked disinclination to occupy themselves with what appear to be meaningless preoccupations—or worse still they perform the tests in a perfunctory fashion simply to win the approval of their examiner.

The Maze, on the other hand, (1) appears to test a segment of intelligence systematically employed by primitives and civilized men alike, and (2) primitives have given ample evidence of finding the tests engaging and meaningful.[4]

[3] For a concise review of these considerations *vide* Porteus, "What do the Maze Tests Measure?" *Australian Journal of Psychology*, Vol. X, No. 3, 1958, pp. 246 f.

[4] *Cf.* p. 9, also Porteus, *The Psychology of a Primitive People*: *A Study of the Australian Aborigine* (London, Edward Arnold, 1931), pp. 301 ff.,

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Interestingly enough, studies of primitives, employing the Maze Test, would answer, at least in part, the suggestion recently made by Professor Corrado Gini, President of the International Institute of Sociology, that test procedures be employed which would discriminate between the several factors which enter into general intelligence.[5]. The Maze Test, as we have indicated, seems to test a segment of general intelligence neglected or indequately assessed by any other series of tests (p. 42).

The application of the Maze to the study of primitive psychology conceivably might also provide some indication of the relative difference in the native disposition to labor which Professor Gini contends distinguishes primitive from civilized populations,[6] a disposition intimately related to long-range planning capacity.[7]

Earlier applications of Maze Tests to primitives have been met with the objection that the use of a single test series has made the results subject to significant deviations as a consequence of a small number of non-representative scores. The use of an expanded series of tests, newly devised (*cf.* chapter VIII, Extension Maze Series), would go far in obviating such objections.

Familiarity with suitable testing techniques has become an essential for the field anthropologists and the availability of a relatively simple test, of such proven analytic and theoretic value, as the Porteus Maze is of enormous potential value in the study of group differences in mentality. The present text serves as an invaluable introduction to the history, the application and the diagnostic, predictive and theoretic value of the Maze. The lucid clarity of style, the abundance of illustrative material and its commanding interest, all recommend the book to the lay reader; no more than its value as a compelling and informative reference is necessary to commend it to the attention of the professional.

351, 360; *The Porteus Maze Test and Intelligence*, p. 114; *Primitive Intelligence and Environment*, pp. 293 f.

[5] *Cf.* Gini, "The Testing of Negro Intelligence," THE MANKIND QUARTERLY, Vol. I, No. 2, October 1960.

[6] *Cf.* Gini, "Psychic and Cultural Traits and the Classification of Human Races," THE MANKIND QUARTERLY, Vol. I, No. 4, April 1961, p. 239; also, Gini, "Economy and Sociology," *Banca Nazionale del Lavoro, Quarterly Review*, No. 14, July-September 1950, p. 5; and *Las Poblaciones Primitivas: Metodos y Resultados* (Buenos Aires, Universidad Nacional de Tucuman, n.d.), pp. 20-23.

[7] *Cf.* Gini, "Caratteristice e cause della primitività," *Genus*, Vol. V, Nos. 3-4, December 1942, pp. 9 f., 22, 41, 43; *Le rilevazioni statistiche tra le popolazioni primitive* (Rome. Manuali Universitari, 1942), pp. 323, 328.

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Progress of Anthropology in India since 1938

PART II

BY B. S. GUHA AND A. K. MITRA

PHYSICAL ANTHROPOLOGY

In racial history practically no work of great importance has been done in the Indian field. The affinities of some of the Indus Valley types have been cleared up by workers in the Middle East. H. Field in his "Contributions to the Anthropology of Iran" (1939) states how Krogman identified one type of dolichoid skull at Hissar I (3000 to 2500 B.C.) as Proto-Mediterranean, having vaults of moderate height, narrow and long face, orbit of moderate height and nasal aperture of moderate breadth. There was a larger and more rugged type which has been called by him Proto-nordic. In Hissar II, seven male and seven female Mediterranean and two male Proto-nordic skulls were noted, while in Hissar III, out of 138 skulls 83 were Mediterranean, 40 Proto-nordic and 50 Negroid and of other races. It is claimed that the Proto-nordic in Hissar III conforms in time to the ethnic upheavals culminating in the Aryan movements. At Sialk, Vallois (1939) speaks of a Proto-Mediterranean type differing in only some respects from the Mediterranean. According to him, this type characterises the Chalcolithic and Predynastic population of Egypt (4500-3500 B.C.); Meggido in Palestine (4000-2000 B.C.); El Obeid, Mesopotamia (3100-300 B.C.); Susa (3000 B.C.) and Jemdet Nasr and Kish (2900-2800 B.C.).

Vallois notes that in Iran it appears in the second millennium at Gian Bed-Hora and Jamshidi, at Anau, Turkistan in the third and fourth, and in the Indus Valley in the third. Compared to the Mediterranean, this type is coarser in build, has the bony eminences more marked, with an aspect much more primitive and brutal and the contours tending to be effaced. The cranium is narrow and long, meso, the vault tending to be elevated, and orbits high, inter-orbital space moderate, nose projecting, aperture mesorrhinic, palate elongated, with a certain degree of Prognathism. Vallois further distinguishes a hyperdolichocephalic group not found

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among the ancient population of Europe and the Near East. This was one of the two varieties of dolichocephals recognised at Kish. Vallois recognises it in Sialk, Hissar and Mohenjodaro, and regards it as the equivalent of the types identified by Buxton and Rice at Kish as Eurafrican. The skull is elongated and very high, vault more or less keel shaped, forehead oblique, superciliary arches well marked. The nose is large, the cheek bones thrust outwards. This is the same type which is now regarded as essentially Caucasoid. Almost everywhere in and outside Iran, disseminated among the Proto-Mediterranean dolichocephals, one notes the existence of these high vaulted hyperdolichocephals. The various identifications so far proposed serve to show, according to Vallois, that it cannot be regarded as a special race and is probably the result among the Proto-Mediterranean forms of having a tendency to hyperdolichocephaly and prognathism and other primitive features. In Sialk it appears to have manifested itself as a group in an independent manner. "Could this type," asks Vallois, "be called hyperdolichocephalic proto-Iranian?" It is not possible to enter into a detailed discussion of this problem here. For the moment it is sufficient to see that, racially speaking, the Indus Valley contained what Vallois terms Proto-Mediterranean and Proto-Iranian (?) elements as in the Iranian and Near Eastern sites.

Among the papers which touched on problems arising from Dr Guha's survey of 1931, mention may be made of "Dravidian and Mon-Khemer Speakers or Australoids: a Study in Variation," by Mitra and Chatterjee. This paper is aimed at demolishing an attempt to correlate physical types with blood group formula, but part of it is an analysis of craniometric data of a number of aboriginal tribes of Chotanagpur and Southern India, and of the Kadars among the latter. The authors showed the existence of a widely distributed primitive substratum (which Guha has termed Proto-Australoid) which does not know the barrier of language. That racial and linguistic barriers do not correspond in India has also been shown by Bowles in his study of the linguistic and racial aspects of the "Mundari Problem" (1943). Mitra and Chatterjee think that variations from this substratum may be attributed either to miscegenation or to spontaneous variation. There are some variations in the Kadar craniometric data, and the authors are inclined to consider these together with the phenomena of spiral hair first described by Guha in some of the Kadars. According to E. Fischer the spiral hair factor appeared spontaneously among the cymotrichous Veddoid aboriginals. While it is not impossible that in India this Negrito character appeared independently, the genetical evidence, and the presence of the Jewrgi skull as well as the cultural evidence of the bamboo combs mentioned by Guha

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cannot be ignored. Elsewhere, studying Caste and Race Origins in Bengal, the authors show from an inscription and Sanskrit texts that inter-caste marriage was not uncommon in ancient India and led to the origin of the numerous caste groups. The textual references which may seem to be theoretical only are confirmed by the evidence of skin colour which shows a wide range of variation from carmine white to fawn cinnamon and dark brown, the frequency of the fairer colours being greater among the higher castes. Among the mestizes of Kismar, Rodenwaldt found also a wide dispersion of skin colour from fair to dark brown, the darker tints prevailing according as the number of European ancestors decreases, and the number of native ancestors correspondingly rises. The authors tried to show that the same kind of variation is presented by different groups in this country. On the analogy of the Kisarese, these phenomena would seem to point to the comparatively greater strength of the aboriginal element in the agricultural population and to the existence, nay, relative preponderance of one or other of the fairer elements of the Europid type among the non-agriculturalists. The authors draw attention to the high preponderance of brachycephaly among a large number of high castes and of dolichocephaly among the aboriginal tribes and agricultural groups like Bagdis and Bauris. The distribution of head-form shows that the double delta of the Hooghly and the Padna and Meghna with some contiguous districts to the west and north shows a higher incidence of brachycephaly, and this applies to the rest of the river system of Bengal. On the other hand westerly districts proximate to the dolicho-zones of North India and the corridor of Orissa and those from which aboriginal thrusts are made into the heart of Bengal show stronger dolichocephaly. Racial differences in the population of Bengal are therefore undeniable. Further, dolichocephaly is of two kinds, the Australoid and the East Mediterranean (termed Basic Dolichocephalic by Guha), both being found in Bengal and the adjoining territories. Brachycephaly, as shown by Guha, is also of two types; the north Mongoloid, *i.e.*, that of Nepal and Sikkim, is more or less ovoid in form looked at from the top, while the Bracycephal of the Bengal deltas has a wedge shaped appearance, flat at the back with pronounced nose and non-Mongolian cheek bones. In any case we have to consider the Bengal Brachycephals from other parts of India as well as the Pamirs, Gilgit and Kashmir and the North Western borders of India. In Bengal we certainly have East Mediterranean and Armenoid-Dinaric mixtures, as those found in other parts of India. Writing on the racial affinity between the Brahuis and the Dravidians, Roy (1940) suggests that the Brahuis are Mediterraneans, modified by the

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admixture of the Pamiris on the one hand and the Indo-Afghans on the other thus giving rise to two intermediate populations—the Irano-Mediterraneans and the Indo-Iraneans. He does not, however, give enough evidence to justify this assumption.

An excellent survey of the problems of Indian racial history is given by Mitra. Some of the work is purely descriptive. (A. N. Chatterjee, *Science*, 1947-48; Macfarlane, 1939-40). Most important in this class is Herrlich's "Contribution to the Anthropology of the Hindukush Kafirs" (1939-40). This is translated from the report of the German Hindukush expedition. Herrlich found among the Red Kafirs an element A, which he ascribes to a primitive population and is presumably identical with the ancient racial elements demonstrated in Central Himalaya; an element B, which shows the characteristic feature of the near Asiatic and Oriental races and is probably a local form of these races; an element C, which exhibits characteristic features of the Nordic and Dinaric races and is presumably one of the racial components which succeeded in maintaining itself in this hilly country from the time of the early Aryan "Indiadom." Herrlich's detailed studies bear out very closely the results already obtained by Guha from his researches in Kaffiristan published earlier.

DERMATOGLYPHICS

Quite good work has been done in this field mainly by Biswas, who in studying the heredity of the palmar pattern (1939-40) states that the main line formula 9.7.5 shows an indication of dominance over 11.9.7. He also shows how in the formulas 11.9.7 and 7.5.5 the Bengalis reveal a similarity more with the European, American, Ainus and Oriyas, but 9.7.5 is more frequent among the Bengalis than among the Eskimos and Red Indians (1939-40a). In the hypothenar pattern loop the resemblance is to the Eskimos, Oriyas and Chinese, and in the thenar pattern loop, the Chinese and the Koreans. The pattern loop on the third and fourth interdigital areas occurs almost in equal proportions among the Bengalis as among Europeans and Oriyas, while among the Mongolians the difference in the appearance of the loop on the above two areas is considerable. As for the finger and palmar prints of Indian juvenile criminals (1945), Biswas states how among 50 Bengali juvenile criminals he found no marked difference in the finger-print patterns of the criminals as compared with normal Indians. However, in the appearance of the pattern loop on the hypothenar, thenar, and on the three interdigital areas, considerable difference exists between the palm and finger of normal Indians. Among the criminals the pattern loop is less frequent in the above

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areas than among the normal individuals. Does this imply that the juvenile criminals tested come from a particular social stratum which is racially distinct? In the main line formula and the axial-triradius there are no such differences.

CRANIOMETRY AND OSTEOMETRY

O. W. C. Hill published his studies on the bones of the vertebral column, the shoulder and pelvic girdles and the superior and inferior extremities of the Veddahs of Ceylon (1942), an outstanding work on this tribe; a comparative study of some Indian mandibles was made by A. Hrdlicka (1940); Shah, in his investigation of the squatting index of the femora of Punjabis (1942), shows that the intercondylar fossa of squatters like the Punjabis are deeper than those of non-squatters. Data on 198 Punjabis were compared with 198 from the United Provinces as well as 189 modern Irish and 100 Canadian. The author proposes a squatting index, *viz.*, greatest depth of the lower articular surface/depth of the intercondylar fossa. I should mention also Sitaram Rao's paper "The Lower Limit of the Spinal Cord in South Indian Foetuses" (1949). In the course of the study of the N.S. of South Indian foetuses the author noted the level of termination of the spinal cord. It was found to end at the sacral 4th vertebra in foetuses where the vertebral column has not yet developed, in contrast to the fully developed individuals in whom it ends at the lower level of the first lumbar vertebra.

The other important contribution was Shourie's, on the eruption age of teeth in India (1946). The author examined 1412 boys and 474 girls of Madras city, a rice-eating area, and 1713 boys of Lahore city, a wheat-eating area, for their teeth. He found that differences in the eruption ages between boys and girls are not very much, those between boys of South and North India are also small. In India the eruption of teeth takes place somewhat earlier than in the U.S.A. Peculiarly enough, the author found that in India the canine erupts earlier than the second bicuspid, which is a deviation from the normal sequence of eruption given in books on anatomy. This needs corroboration by further studies in this country.

RADIOLOGY

The only interesting contribution on this subject was by Joseph in his analyses of ortho-diagraphic measurements of normal Indian subjects (1948). The author obtained ortho-diagraphic tracings of the heart and the aorta of 100 healthy Indian subjects of liberal profession and labourers of different castes and vegetarians and non-vegetarians. The height and weight of the subjects were

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recorded and various diameters of the heart and the aorta measured, the average giving minimal and maximal values. The author concludes (1) that minimum heart measurements for Indian subjects are definitely lower than those of continental (*i.e.*, European) workers; (2) that the maximum figures for the heart are practically the same, except for the diameters of the right auricle and left ventricle, which diameters are higher than the continental ones. These high figures were noted in very tall and thin subjects where the heart was practically vertical.

SEROLOGICAL RESEARCHES

Quite a number of studies dealing with the serological composition of Indian communities have been published during the period. Mention may be made of the ABO frequencies of various tribes and castes by Majumdar (1940, 1942, 1943, 1945, 1950), Macfarlane (1940, 1941 with Sarkar, 1942), Sarkar (1943, 1949), Reddi (1943), Agar (1946), Karra (1947), Iyer (1946) and Greval *et al.* (1940). Unfortunately most of the groups consist only of a small number of individuals. The value of such investigations is therefore limited. Moreover some of the studies suggest that their authors are obviously not trained serologists. Their results are therefore unreliable and likely to lead to confusion (Mitra and Chatterjee, 1943). As typical reactions are not infrequent under certain conditions often encountered in India, only trained serologists should be encouraged to do blood grouping work.

Work on Rh types was mostly limited to the determination of the incidence of clinically positive and negative individuals (Khanolkar and Sanghvi, 1945; Bird, 1946; Greval and Roy Chowdhury, 1946; Ranganathan *et al.*, 1946). More interesting are the data obtained for the Rh sub-types by Ranganathan *et al.* (1948), Wiener, Sonn and Belkin (1945) and Prasad *et al.* (1949). In the first study unfortunately anti-E was not available and the picture therefore is incomplete. The last two papers, however, constitute a real contribution to the knowledge of blood groups in India, though it is regrettable that the studies had to be done on such heterogeneous samples of "Moslem Sailors" and "Indian Students."

Interesting, though based on small material, is Greval and Mukherji's investigation "Low Iso Haemagglutinogen Content of Saliva in Calcutta" (1950). The authors found the agglutinogen content in the saliva of 50 Indian subjects from Calcutta to be very poor. No correlation between agglutinogen content and diet and complexions of the subjects could be found. Poti's (1950) attempt to find a more precise method for comparing the sero-

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logical composition of two populations is to be commended. The author concludes that discrimination tests using the genotypic ratios give greater precision, provided the two compared populations are homogeneous.

SOMATOMETRY AND BIOMETRY

The most disappointing branches of Anthropology from the point of view of output and quality have been papers relating to Somatometry and Biometry. In fact, except for work done by non-Indians, little progress may be said to have been made since the publication of Guha's standard work on the racial affinities of the Indian peoples (1931). Indeed, there has been very little field work in this subject to extend the sphere of our knowledge with regard to the somatic traits of the Indian people. Among the papers published, reference may be made firstly to the work of Mahalanobis, Majumdar and Rao: "Anthropological Survey of the United Provinces" (1948). The statistical analysis of the anthropometric data collected by Majumdar, a well known social anthropologist, made by Mahalanobis, the eminent statistician, and C. R. Rao, is of high mathematical quality, but the same cannot be said of the methods employed by Majumdar or of his generalisations and misconceptions. For example, what value could be attached to his measurements of 50 Bhutias taken in one single afternoon and using "standard charts" for his skin and eye colours (pp. 103, 107) without any specification as to whether they were of Broca, Martin, or Martin-Schultz? Mahalanobis and Rao also mention mistakes in the copying of his data and suggest further investigation (p. 317) for the figures for the Rajwar nasal breadth which are surprisingly low. His easy acceptance of hearsay accounts concerning Dr Guha's Marhatta and Bengali data (p. 97) without any reference to him indicates a lack of critical acumen.

The United Provinces Anthropometrical Survey in connection with the Census of 1941 was certainly a laudable undertaking, but it would have paid the investigator to use more careful techniques and better judgment in carrying it out. While the statisticians have done their work well and even brilliantly, bringing out three basic clusterings of 23 social groups, Majumdar did not trouble to analyse the results from the standpoint of physical anthropology and left the consideration of "Physical Appearance in Relation to Ethnological Evidence" and even the writing of the "Ethnological Notes" to Professor Mahalanobis. One looks in vain for a radiological analysis which, considering the geographical situation of the province, might have made a substantial addition to our knowledge of the racial history of India. We come across such amazing state-

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ments as "Owing to the considerable variability exhibited by all unselected populations, it is evident that if one cares to analyse the measurements of any supposed homogeneous group one should certainly get all the 'fundamental types' within the same population."

Other studies on somatometry include two papers by Karve, one of which is on the Madhyandina Brahmins of the Maharashtra country (1941); out of the total 74 pages of this paper only nine are devoted to the text, the rest containing tables of metric data and their statistical consonants. The writer has not been able to utilise them, and her conclusions have very little reference to them or to the values given in Appendix II of the analysis of variance. One is led to the conclusion that she is not able to understand the significance of her statistical data or of her morphological findings. The author obviously is not acquainted with the techniques of physical anthropology. For example, all index classifications of the measurements are not in agreement with the norms internationally agreed upon.

The eye colour is said to have been taken by Martin's scale (p. 3) and the figures given in Table 29A (p. 33) and 29B would indicate that out of 623 males and 324 females tested the eye colours of 612 and 322 respectively fall between numbers 12 and 16, *i.e.* different shades of blue. If the figures given be taken as correct it will mean that, compared for instance to Switzerland where Schlaginhaufen found only 25.14% of blue, the Madhyandina Brahmins have over 90% of blue eyes.

As suspected from her earlier study (1941), her second paper on anthropometric measurements of Maharashtra, in collaboration with V. T. Dandekar, shows unmistakably that the authors are ignorant of the modern techniques of physical anthropology as recognised by international conventions. For example (p. 45), tragion is defined as "the middle of the tragion," auricular height is measured from the "floor of the auditory meatus," in nasal and facial heights the upper landmark is given as "sellion." Eye colours, as in 1941, were claimed to have been recorded with the help of Martin's Scale, but the utter absurdity of the figures if judged by Martin's standard leads one to think that she mistook it for the revised Martin-Schultz Scale and was unaware that a totally different number system has been used in the latter. If this is the character of her observations, it goes without saying that very little reliance can be placed upon her figures.

It is needless to say that studies such as those of Karve and Dandekar are likely to create confusion in the minds of unwary scholars and are scientifically harmful.

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The following books have been sent to us through the kindness of Professor Dr Reinhard Peesch of the Institut für deutsche Volkskunde, Deutsche Akademie der Wissenschaften zu Berlin:

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Book Reviews

HEREDITY AND EVOLUTION IN HUMAN POPULATIONS

By L. C. Dunn. Harvard University Press, Cambridge, Massachusetts, 1959. Pp. 157.

This work affords a very suggestive and informative introduction to the study of population dynamics and its significance in the biological process of human evolution. As such it is of prime importance in the appraisal of contemporary speculation concerning race and race formation as factors in that process.

A population which differs from other populations in the relative frequency of determinate genes constitutes for Dunn, by definition, a "race" (p. 90). Most of the subsequent discussion is rendered intelligible only if this definition is borne in mind.

Since such a definition is offered, Dunn's principal concern is with what he elsewhere called "marriage circles" (*cf.* Dunn, *Race and Biology*, Paris, UNESCO, 1951, p. 25; *cf.* in this volume, pp. 106 f.), endogamous breeding populations tending toward genetic differentiation. Such "isolates" may arise as a consequence of geographic or social impediments to gene flow. Of particular interest is the maintenance of social barriers to such reproductive intercommunication. Such barriers, isolating one breeding community from another, promote the development and strengthening of specific traits within each given mendelian population, leading to the appearance of local variations (*cf.* pp. 102 f.) of critical importance for the provision of types upon which a selective environment can operate. Random genetic drift (the Sewall Wright Effect) produces manifest variations much more readily in populations which practice inbreeding, the rate and persistence of variation being largely a function of the mutation rate and the size of the breeding community (p. 129). Thus, again, the effect of such practices would be to provide an abundance of group genotypes upon which selective forces might operate (p. 132).

Specific and subspecific groups disposed to mate in a manner more or less favorable to the concentration of genotypes in pure lines ("races") would afford a greater variety of hereditary characteristics and consequently enjoy greater survival potential in the face of natural (and artificial) selective agencies. Such a disposition would be "fixed" (since populations disposed to random mating would have less survival potential), in time, to manifest itself in contemporary populations as a tendency to preferential mating.

Such preferences, in human populations, can be religious, economic (class, professional), cultural (national, educational), or racial in the anthropological sense (*i.e.*, preference for a given physical type). Dunn discusses in some detail a religious isolate, the Jewish community of Rome (pp. 109-117), and indicates that that community has, through social isolation, maintained its genetic identity distinct from the surrounding population although both have shared a common territory for two thousand years (p. 113).

Effective reproductive isolation can thus be sustained by a psychological disposition to seek out "similars" as reproductive partners, a disposition

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which human beings seem to share with animals, all of whom exhibit marked mating preferences, favoring, it would seem, mates of their own local "race" (*cf.* C. H. Waddington, "The Human Evolutionary System," *Darwinism and the Study of Society*, London, Tavistock, 1961, p. 67). Such a disposition is certainly one of the most potent of the race-forming factors which provide the abundance of local variation so necessary to the process of micro-evolution and the evolutionary succession of types.

This book is highly recommended as an introduction to a proper appreciation of the psychosocial factors involved in the biological evolution of man, an appreciation made manifestly articulate in the pioneer work of Sir Arthur Keith, C. D. Darlington and Corrado Gini.

A. JAMES GREGOR.

ANATOMY OF THE FUTURE

By Roderick Seidenberg. University of North Carolina Press, Chapel Hill, 1961. Pp. 173. Price $3.50.

This book cannot be reviewed without reference to an earlier work of the author. Seidenberg published in 1950 (the same Press) an inquiry entitled *Post-Historic Man*, which received further circulation as a Beacon Press paperback in 1957. In this work the author developed a convincing argument that social evolution was carrying man to a form of civilization indistinguishable from a termite nest. The increasing complexity of modern life was leading irresistibly to increasing organization. Under the aegis of intelligence, man was being converted into a machine component subject to fossilized bureaucratic codes that stripped him of the last vestiges of conscious individuality. What raised this inquiry out of the ranks of science-fiction speculation was the sobering observation that counter-measures to avert this end also depended on organization, and that to organize effectively was to surrender to the same enemy under a different flag. The tightly-spun logic of *Post-Historic Man* placed Seidenberg first among the writers of modern apocalyptic literature.

Perhaps it was too much to expect that the author's second effort would produce any new insights. *Anatomy of the Future* restates the case and defends the conclusions against rival historical projections. Since the alternate views rest on unsubstantiated hopes or mystical utopianism, Seidenberg does not have to engage in difficult debate. From the biological field, the best the reviewer can offer is the thought that organization may be a disease that will run its course and immunize the survivors against the consequences of psychological robotization. Most readers will consider even negative stasis preferable to atomic suicide.

Anatomy of the Future is a grim book. In the first half almost every paragraph hammers out the same theme of hopelessness. The style is very polished but in some cases the rhapsodic phrasing begins to burden the reader. Adverbs and adjectives come in pairs and there are too many irritating conversational "as it were's" scattered throughout. Analogies and metaphors frequently reappear from the first work (*e.g.* sunset flare). These minor faults stand out only because of the general excellence of the writing and they are secondary to the great frustration that the theme itself will induce.

Seidenberg's books are important contributions. The problem he poses is as real as that of overpopulation, race war, communism, and nuclear disaster. Educators, students, and the intelligent public should read and

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discuss his sociology of the future. The dismal finale pictured by these works can be avoided only if a New Man can be fabricated. Unfortunately, we have no Nietzschean Superman to cross swords with the robot spectre of tomorrow.

ROBERT E. KUTTNER.

AFRICAN GENESIS: A PERSONAL INVESTIGATION INTO THE ANIMAL ORIGINS AND NATURE OF MAN

By Robert Ardrey. Atheneum, New York. 1961. Pp. 380, 2 charts, drawings by Berdine Ardrey. Price $6.95.

A great many circumstances, apparently, conspired to produce the volume herein considered. That it is disarmingly well written is a consequence of the fact that Mr Ardrey is an accomplished dramatist. That the book says, without the systematic employment of euphemism, the things that have a long time wanted saying, is a consequence of the fact that Mr Ardrey is not a professional academician.

In biographical asides the author indicates the influences that led him, a dramatist, to undertake the specialized study and travel that ultimately led to the writing of *African Genesis*. His ability as a gifted literary craftsman is everywhere apparent. So charming are his vignettes, so dramatic his descriptive narrative, that the reader is perhaps too often caught up in the prose at the expense of content. This is an indictment that cannot often be lodged against professional literature.

The author has some telling things to say about the contemporary analysis of the nature of man. In the course of his critique environmentalism (*cf.* p. 158) and Freudianism (pp. 64, 74) suffer considerable abuse (*cf.* Chapter VI, particularly pp. 160-165), as does, more peripherally, Marxism (pp. 155-158). The principal thesis advanced by the volume is that the principal factors influencing human behavior are genetic (pp. 201, 320), instinctual (pp. 118, 133, 147, 312 f.), inherited from man's primate, mammalian and vertebrate antecedents. With the latter he shares the instincts for sex, food, territory, dominance and order—with the former, his *australopithecine* progenitors, he shares the addiction to weapons (pp. 29, 167, 204 f., 312 f., 318).

Contemporary social theorists have long looked askance at "instinct psychology" for a variety of reasons, some creditable, some suspect. Mr Ardrey's accounts of animal behavior, his compelling illustrations of the operations of well articulated "drives" among vertebrates of all and sundry sorts, phenomena of hierarchical ordering in animal societies, the disposition toward group amity and out-group enmity and the attendant defense of group territory, make a forceful case for reconsidering man's instinctual heritage. Mr Ardrey has found that in suggesting such a thesis he has thrown himself athwart the "accepted" lines of approach to the study of man. He finds the subject "taboo" among professional natural and social scientists (pp. 14, 59), and he documents instances in which real issues are obscured not only by simple avoidance (p. 312) but specious argument and artifice as well (pp. 290-292).

Mr Ardrey has clearly perceived the lines of contest and his weight has fallen, clearly, on the side of the inveterate dissidents of our own time, among whom Sir Arthur Keith is to be numbered among the most prominent (*cf.* his references to Keith: pp. 18, 150, 163, 169, 172, 178, 245, 361). Most of the author's references to the professional literature in support of the "group theory" of evolution (references to Heape, Carpenter

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and Howard) derive mediately or immediately from the volumes of Keith (only one of which the author mentions), who as long ago as 1919 argued the instinctual basis of man's regular arrangement into self-regarding groups of limited and jealous compass (*cf.* A. Keith, *Nationality and Race from an Anthropologist's Point of View*, London, Oxford, 1919). In fact, it can be said, with some important qualifications, that the synthesis, interpretation and evaluation of the scientific revolution in the assessment of the human circumstance which Mr Ardrey conceives of himself as first recording (p. 15) has been forthcoming from a variety of sources. This reviewer attempted to record some principal features of that revolution in his communication before the XIXth International Congress of Sociology ("Sociology and the Anthropobiological Sciences," *Mémoire du XIXe Congrès International de Sociologie*, Mexico, D. F., 1960, pp. 83-106), resting the case on the pioneer works of Sir Arthur Keith, Corrado Gini and C. D. Darlington.

The implications of the revolution so artfully recorded by Mr Ardrey are far-reaching. Man is conceived as a denizen of relatively closed groups, animated by an innate disposition to favor "similars" and suspect "dissimilars" (*i.e.*, preference and prejudice), to identify with a given territory (*i.e.*, nationalism) and to organize himself in a hierarchical social order (*i.e.* class and/or racial priority), the analogues of animal behavior. These dispositions are construed as the heritage of an evolutionary past, both agents and products of natural selection. The most awesome and "original" feature of the author's exposition is delivered in his analysis of man as a creature disposed to resolve his differences with an appeal to weapons. The author traces this natural disposition to man's *australopithecine* ancestry. All of which opposes the contemporary psychodynamic and/or socio-economic interpretation of man's behavior (*i.e.*, that "aggression" is the consequence of "parental rejection," broken homes, early weaning or unresolved œdipus complexes and/or economic deprivation).

Mr Ardrey will find that the struggle between the two opposing views of man's nature can be traced through to pre-Darwinian natural and social sciences (*cf.* the very modern discussion of territoriality and group avoidance in Nott and Gliddon's *Types of Mankind*, Philadelphia, 1855), the analysis of the origins of class and race conflict in Gumplowicz, Oppenheimer, Giddings, Niceforo and Darlington and the conflict of "hard" versus "soft" heredity. In our own time the distinctions are marked by various forms of environmentalism (Lysenkoism as its most radical expression) and Social Darwinism (Nordicism as its most radical expression). For the last century social science has been the battle ground for these opposing views and the field is veritably littered with the corpses of dead theories and indefensible conjectures. This reviewer can predict, with some assurance, that since Mr Ardrey is given to taking up his cudgel in this heated contest, he can anticipate little profit and no little abuse. With this preliminary warning this reviewer welcomes him into the fray.

A. JAMES GREGOR.

NO STONE UNTURNED: AN ALMANAC OF NORTH AMERICAN PREHISTORY

By Louis A. Brennan. Victor Gollancz, London, 1960. Pp. 370, 11 photographs, 29 line drawings. Price 25s.

This is an account of American prehistory. It is written in opposition to the view that American prehistory is made up of a series of intrusive cultures and peoples from Asia, and argues that from the first immigrants

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came the later Amerinds, and that the development of later techniques which resemble those of Eurasia is due to independent parallel development. While there is force in much of his argument, the independent production of broad-skulled races from the long would seem to be more economically explained by the immigration of later Mongoloid migrants, following on the heels of the earlier primitive longheads. This would explain the occurrence of Australoid types in America, to which Dixon referred, and it may well have been that the earliest longheads were a stock with Australoid affiliations. There is also the possibility of other longheads, from Europe, of Chancelade strain having reached America very early to found a part of the strain from which the Eskimo (especially in the east) is derived. However all this may be, the author makes out a good case for very early settlement of man in America, and secondly his arguments for the land bridge between Asia and America at the Behring Straits in the later inter-glacial and glacial periods are very convincing. Likewise, his suggestion that contacts of a cultural nature reached America from Asia by way of an intermediatory series of cultural centres, of which Easter Island is a single surviving instance, being the last of a chain of islands which have now sunk, is convincing. The discovery of the Easter Island Rise, the under-water mountain range, would support this theory.

In several places the author alludes to theories which are based on the concept of crossings between Neanderthal man and Homo Sapiens. While not accepting these arguments ourselves we note them as instances in which there appears to be a readiness to accept as a fact that two distinct species could cross and be viable. We wonder, in the light of such views (which we think are very probably true), why in another context, viability of crosses is held to indicate that the parental strains must belong to the same species! It seems to us that viability is purely a matter of chance and has no bearing one way or the other on whether the stocks involved are different species, or belong to the same one.

R. GAYRE OF GAYRE.

THE NEW NEGRO

Edited by Mathew H. Ahmann. Fides Publishers, Notre Dame, Indiana, 1961. Pp. 145. Price $3.50.

This small book is made up of five essays devoted to the theme of the "New Negro." Three of the papers were presented at the August 1961 convention of the National Catholic Conference for Interracial Justice. The executive director of this organization wrote the editorial preface which calls racism a heresy.

Dr Stephen J. Wright, president of a Negro university, writes on the New Negro in the South, and Professor Kenneth B. Clark covers the topic for the North. These authors document the progress made to integrate the Negro into the political and economic life of the nation. Professor Clark makes the cogent point that Negro agitation by sit-ins, boycott, and the Gandhi tactic of shaming the oppressor by "love" is not likely to succeed against social discrimination (housing, political appointments, etc.) since the culprits who are the targets of these measures are too shadowy for the necessary dramatic confrontation.

The third essay is by a young participant in the "Freedom Rides" and has the brisk enthusiasm that marks all converts to reformist crusades. The fourth contribution is a discussion of the legality of the Negro

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sit-ins in segregated restaurants by Father William J. Kenealy, a Jesuit law professor, who also reviews various Supreme Court decisions. His last paragraph takes him from law to ethics, and he concludes that no man has the moral right to use private property in a manner transgressing the supreme law of charity.

Dr Thomas P. Melady, a former advisor to the Ethiopian government and presently chairman of the Africa Committee of the Catholic Association for International Peace, takes African independence into focus and highlights the fact that Christianity has too long been identified with colonialism by the African native for effective proselytism. He calls for a clear demarcation that will symbolize the antithetical nature of these two movements.

The final piece is a transcript of a radio symposium on the Negro as both a subject and a creator of literature. This bonus feature contains some interesting insights on the mind of the Negro artist.

The book presents the orthodox liberal viewpoint. The contributors are for the most part members of the various organizations promoting the social changes they ascribe. The resistant reader may well ask embarrassing questions. Of Dr Melady: If the Catholic Church, in spiritual competition with Islam, is failing to win its share of African converts, why then should liberal Catholics presume to advise "colonialists" on how to hold Africa for the West against communist competition? A record of failure in one's own area of specialization is a poor credential for a candidate to the office of politico-military strategist. Of Father Kenealy: You are apparently willing to abrade property rights to fight racism, and apparently you can countenance federal intervention to reduce group frictions. Would you tolerate abrasion of religious freedom if this measure helped combat religious prejudice? Would you support federal control of Catholic proselytism if this reduced Protestant resentments and created greater religious harmony? Of Professor Clark: You write in the December 1961 issue of the Catholic *Interracial Review* (p. 308) that "segregated education is inefficient education, for all children, white or black, Jew or Catholic or Protestant." You make it an "inescapable demand of the future" that heterogeneous schools be the goals of education. Does this mean that in time the social order sought by you will force over four million Catholic students in religious schools in America into religiously "integrated" secular schools? If racial segregation harms the student, then religious segregation is also damaging. Will the moralistic aggression of non-Catholic liberals ultimately be turned against their present Catholic allies? What rights remain to be infringed upon in the name of the modern Mammon—Brotherhood?

ROBERT E. KUTTNER.

PSYCHOLOGY AND THE RELIGIOUS QUEST: AN ACCOUNT OF THE PSYCHOLOGY OF RELIGION AND A DEFENCE OF INDIVIDUALISM

By R. B. Cattell. Thomas Nelson, London, 1948. Pp. 195. Price 5s.

This book is an interesting and stimulating attempt by an eminent social theorist to provide a natural basis for religion and morality within the context of what has become known as evolutionary ethics. Man's perennial preoccupation with God is conceived as a half-conscious awareness of the pre-eminent value of the "group mind," which Cattell calls the Theopsyche (". . . by God we mean the vast group mind of civilization . . ." p. 107;

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cf. pp. 62, 68, 71, 77, 79, 81, 83), and the "Universal Reality" against which that entity works out its destiny (*cf.* chap. xi). The quest for immortality is seen realized in the biological continuity of human life itself as well as the enduring spiritual impact of individual intellectual, artistic and moral effort (pp. 72-74).

The group mind or Theopsyche is seen possessed of those attributes traditionally assigned to God: that of superior wisdom, power and goodness (all necessarily in a highly qualified sense). This analysis is conceived as emotionally and intellectually satisfying. Whether this is so or not is left to the reader's judgment. Whether the thirst for personal immortality is sated by the anticipated widening circle of influence to be posthumously enjoyed by one's earthly labors—and whether the quest for God is resolved in the awareness that the group mind persists while individual minds are ephemeral, in the qualified knowledge that the group is generally more capable than the individual—are questions which can hardly be definitively answered either by this book or this reviewer.

In the area of ethical speculation, on the other hand, it seems evident that the author has attempted too much. The main contention seems to be that the first principles of ethics can be divined in "the general observation that all living things strive towards higher levels of evolution . . ." (pp. 87 f.; *cf.* p. 103). This attempt seems to be afflicted with a variation of what analytic philosophers have termed the "naturalistic fallacy." Because observation reveals that most, if not all, creatures are disposed to certain behavior can hardly certify that behavior as "good." One cannot *validate* an ethical principle with an appeal to experience. One is not concerned in such an enterprise with what everyone, or everything, does, but with what they *should* do. One might *vindicate* one's ethics by indicating that whatever values are entertained they are furthered by "evolutionary progress" or what have you—but in so doing one recognizes that values, in themselves, are not determined by empirical inquiry. This is perhaps enough for ordinary disputation.

Were the author more familiar with the philosophy as a real discipline his argument would carry considerably more weight. He would find valuable support in the arguments of Idealists of the Hegelian and Neo-Hegelian conviction. As it is, the author is cavalier in his treatment of serious philosophy. He bluders into a number of howlers that seriously undermine the merit of an otherwise substantial work. He imagines that the "first of the more ambitious attempts at a rationally derived morality is associated with the name of Auguste Comte" (p. 85), neglecting such attempts, certainly as ambitious, delivered by philosophy since the time of Plato. On page 116 he obviously confuses Karl Marx with Nicolai Lenin, contending that the former "escaped from an absolutist Russia to a liberal country where he could lay the foundations of a new Russia." Marx, of course, never stepped foot inside "absolutist Russia."

While the author argues that differences are necessary within the evolutionary compass of things (pp. 114 f.) and that "the study of psychological and physiological differences among races is in such early infancy that practically no predictions are possible as to the limits of adjustment of any race to any culture," he goes on to argue that certain "indubitably backward" races be extinguished through a gradual restriction of births "and by life in adapted reserves and asylums" (pp. 94, 147).

These lapses are much to be lamented because the work itself is otherwise a cogently argued rationale for a multiracial, multinational and multicultural world. It is a call for the dedication of thinking men to social service, to an ideal life in which all can realize to the fullest their

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inherent potential within their specific cultural and racial environs, to a reasoned and careful reappraisal of man's religious and ethical commitments. Peripheral figures like McDougall and Nietzsche are sympathetically considered (pp. 14, 18, 62, 67, 88, 89, 146). The author's estimate of hereditary factors as significant determinants in the history of man acts as a salutary corrective to the contemporary environmentalist predisposition (*cf.* pp. 89, 167 f.).

Supplementary readings are suggested at the close of each chapter and the book is augmented by an adequate index. The book should be critically read by all who are interested in the problems which beset our troubled world.

A. JAMES GREGOR.

THE BIOLOGICAL BASIS OF HUMAN FREEDOM

By Theodosius Dobzhansky. Columbia University, New York, 1960. Pp. 139. Price $1.25.

This is a temperate, gracefully argued exposition of the philosophical implications of modern biology. A competent, objective discussion of the "nature-nurture controversy" is undertaken in the course of developing the central thesis: that man is uniquely a culture-creating animal and his ability to create and transmit a culture is a consequence of a "genetically controlled plasticity of personality traits" (p. 52).

Professor Dobzhansky is sharp in his criticism of racial determinism (pp. 44-47) as well as radical environmentalism (pp. 47-52) which he refers to as the "myth from the Age of the Enlightenment" (p. 53). Dobzhansky conceives the promulgation of this "myth" "partly as a reaction against the crudities of biological racism" which prompted "some anthropologists to ignore the existence of genetic dfferences between persons and populations altogether" (pp. 47 f.). In his discursive account Dobzhansky indicates that there is convincing evidence for holding behavioral traits to be conditioned by genetic determinants (*cf.* pp. 12, 38 f., 116 f., 130). Criminality, for example, is the consequence of the inheritance of temperamental dispositions which, under certain circumstances, induce anti-social behavior (p. 40). "We need not assume," he goes on, "that human nature is similar in Hottentots and in Americans. We may reasonably doubt that it is" (p. 54).

Some few errors mar his exposition. He contends that Gobineau argued that "just one race—the blue eyed, blond Nordics" were capable of "advancing" and "making use of civilization" (p. 45). Gobineau, as a matter of fact, and in the first instance, was convinced of the phenotypic heterogeneity of his "superior" race (*cf.* F. Hankins, *The Racial Basis of Civilization* (p. 75), being himself a dark-eyed brunet (*cf.* L. Woltmann, *Die Germanen in Frankreich*). In the second place Gobineau imagined the pigmented races to be the all but exclusive possessors of the "artistic temperament." Wherever he found art flourishing, he conceived the admixture of "dark blood" to have been its essential and sufficient cause (*cf* A. Gobineau, *Ungleichheit der Menschenrassen*, Schemann Edition, II, Chapter XVII and Faure's *History of Art*, IV, pp. 90 ff.).

Further in the text Dobzhansky tells us that "Freud has refused to consider the possible role of the genetic differences between people in the formation of their personalities" (p. 50). While it is true that in one instance Freud stated that ". . . neurosis . . . can be induced by certain injurious influences in the sexual life, without any hereditary taint being

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necessarily present . . ." (S. Freud, "Sexual Morality and Nervousness," *Collected Papers*, II, p. 81), he elsewhere contended, "Probably, indeed, no neurosis occurs without some . . . constitutional, congenital, predisposition" (S. Freud, *The Question of Lay Analysis*, p. 112). This is, of course, more of a criticism of Freud than it is of Dobzhansky. The overall impression of Freud's work accords itself with Dobzhansky's appraisal. It is just interesting to note that Freud rarely let an occasion for contradicting himself pass without using it to his own full disadvantage.

This brief work is of high caliber and emphasizes the role of population units as the natural elements of micro-evolution (pp. 64, 126), the biological characteristic of educability as the basis of culture, the real possibility that statistical differences in psychic traits between populations exist and that interpersonal variability probably involves genetic as well as cultural components (*cf.* pp. 115 f.). Dobzhansky counsels that "dogmatic pronouncements" with respect to racial differences be eschewed in the pursuit of an objective science of man (pp. 116, 119). His discussion of the nature of ethical systems, particularly with reference to "evolutionary ethics" is sound and instructive. He fails to appreciate, on the other hand, at least in some measure, the importance of social or reproductive isolation in the evolutionary succession of intraspecific variations.

A. JAMES GREGOR.

MATRILINEAL KINSHIP

Edited by David M. Schneider and Kathleen Gough. University of California Press, Berkeley, California: Cambridge University Press, 1961. Pp. xx, 761. Price $11.75.

Certain areas in anthropology are sometimes regarded as devoid of research possibilities. To many it must have appeared that everything that could be said about matriliny had been said already by the turn of the century. This illusive simplicity never was true, but if it were this remarkable book would have completely revitalized the subject. The volume had its inception at a Harvard seminar in 1954. A lengthy preface and a superior introductory chapter by Schneider outline the theoretical problems dealt with in the later essays.

The first of three parts is a survey of nine matrilineal kinship systems: Plateau Tonga, Navaho, Trukese, Trobriander, Ashanti, the Nayar, Tiyyar, and Mappilla of North Kerala and the Nayar of Central Kerala. Part two covers the variations in matrilineal systems and is based on the studies in the first section plus six other systems with which the author (Gough) was closely acquainted. The third section (Aberle) is a cross-cultural comparison of 84 matrilineal societies culled from 565 listings in Murdock's World Ethnographic Sample (*American Anthropologist*, Vol. 59, pp. 664-687, 1957). Approximately half of the book is by Gough: the four Kerala peoples and all of part two. The other authors of part one are Elizabeth Colson, David Aberle, David Schneider, George Fathauer, and Harry Basehart.

The topics explored are marriage preferences, sexual rights, lines of respect and authority, economic responsibilities between mates and generations, residence of mates, the connection of descent groups to categories of kin, and the stability of any of these items in the face of social changes. By an intensive examination of a few cultures, Gough attempts to link the variations in different matrilineal societies to other variables

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(environment, technology, political centralization, etc.). Some of the problems were first raised as theoretical questions by Schneider. Aberle expands the investigation by a statistical handling of a much larger sample.

Aberle's approach is both stimulating and novel. The value of statistics in cultural anthropology is an unsettled point. It would appear that the data are not so voluminous as to preclude a study in depth of individual societies to determine causative factors behind variations. When sub-categories are set up, the samples become smaller, and the meaning of significant correlations become highly diluted. Aberle recognizes the hazards and it is probable that with better data the technique will be further extended and with greater profit. The variables studied include subsistence base, size of political unit, social stratification, and community composition.

The trend suggested by these dfferent approaches (theoretical, intensive analysis, and statistical methods) is that matrilineal societies are inherently less stable and experience greater strain on exposure to evolutionary or outside forces. Patrilineal cultures are less susceptible to fissive influences since they are able to employ the natural bond between mates and between father and child as added elements of solidarity. Perhaps the crucial ecological determinant is the ease with which a society can form an efficient economic unit. In large and complex civilizations, the nuclear family evolving from the patrilineal society appears to have a real advantage.

This book is a notable contribution and is likely to remain a landmark for many years. Readers will be particularly impressed by the analytical skills of the authors.

ROBERT E. KUTTNER.

HEBREW THOUGHT COMPARED WITH GREEK

By Thorleif Boman. Translated from the German by J. Moreau. The Westminster Press, Philadelphia, 1960. Pp. 224. Price $4.50.

The present work is a competent and readable translation of *Das hebraeische Denken im Vergleich mit dem Griechischen* (1954), brought up to date with the author's revision of January 1960. It is essentially an attempt to understand the nature of the "Israelitic religious genius" (p. 196) and as such is a knowledgable and stimulating insight into the phychology of the Hebrew peopie. Against the background of Indo-european thought (*cf.* particularly, p. 202), the singularities of Hebraic psychology are made manifest with a diligence and rigor that commend themselves to the scholar and yet do not impair the literary quality of the work itself.

The principal contention of the monograph is that the pattern of thought characteristic of the Hebrews and the Greeks, respectively, "remained identical with itself during [each] people's entire mental-spiritual history . . ." (p. 23, *cf.* also p. 23, n. 1). For the Greek (essentially the Indoeuropean) mind, the world is conceived spatially, visually, in discrete and static terms which lend themselves to quantification, and to logical articulation, that is, to natural science (*cf.* pp. 51 f., 86, 115 f., 153, 165, 170, 174, 196, 205, 260 f.), while for the Hebrew, essentially the Semitic (*cf* p. 34), the world is conceived temporally, sensually (impressionistically), in configurative (collective) and dynamic terms which lend themselves in part to mysticism and most certainly to religious "intuition" (*cf.* pp. 31 f., 34, 68, 70, 74, 87, 136, 148, 150 f., 153, 157, 170, 195, 196, 202, 205 f.).

Boman musters an impressive array of facts culled from linguistic

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analysis, literary expression as manifest in the Old Testament, and a careful analytic explication of the concepts which provide the foundation for Hebraic thought. He affords a creditable descriptive account of the differences which characterized Hebrew and Greek thought throughout antiquity. What he does not do, explicitly, is attempt an interpretation of the causes which produced those apparent differences. He does, however, provide significant suggestions which deliver a tentative explanation, but this explanation must be reconstructed by the reader himself.

Boman holds that the uniqueness of Hebraic (Semitic) thinking remained constant throughout the sociocultural changes in time so that one is forced to exclude an exclusively cultural interpretation of the peculiarities of that thinking. He, furthermore, makes a number of suggestive asides: in his discussion of the Israelitic disposition to view the world sensually, impressionistically, and dynamically, for example, he points out the obvious interrelationship "between Hebrew-biblical mentality and modern non-figurative art: negatively expressed, they are both non-figurative; positively, they are dynamic" (p. 89, n. 2). That Jewish artists, Cezanne, Picasso, Matisse, Modigliani, Chagall, Kisling and Soutine among others, have, in fact, lent their particular genius to the development of non-figurative, non-representational art (*cf.* particularly, M. Cheney, *Modern Art in America*, Whittlesey House, New York, 1939, pp. 58 f., 167-170), coupled with Boman's contention that the "Semitic mind" maintains, through time, a persistent identity, poses a number of thorny speculative problems for comparative ethnopsychology.

Boman further complicates his discussion by drawing illustrations of "Hebraic thinking" from the works of a contemporary Jewish philosopher, Henri Bergson (*cf.* pp. 127, 129, 144, 174). The implications are obvious. Boman is suggesting that there is a discernible constellation of psychic dispositions, so to conceive the world, that is uniquely Semitic and that those dispositions persist through time and all its attendant social and cultural vicissitudes. Where Boman finds evidences of both Indoeuropean and Semitic thinking he traces them back to instances of Indoeuropeans and Semites being "thrown together" (p. 207, n. 3), suggesting, again, that each group has a characteristic psychology essentially its own. Even when he discusses the philosophy of Heraclitus, which he deems essentially non-Greek (pp. 51 f.), he subtly suggests an Oriental origin.

Boman further seems to ascribe but little influence to intercultural borrowing. Wherever the Hebrews are influenced by alien cultures, they transfigure, alter, and synthesize that influence until it accords itself with those psychic predispositions Boman takes so much care to identify.

Apparently Boman believes that ideas which characterize each ethnic group can survive only if those ideas are rooted in the physical presence of those in whom they find their source. All of which suggests that Professor Boman is convinced that psychic traits arise out of hereditary dispositions, that identifiable ethnic groups possess hereditary dispositions made manifest in identifiable culture traits and that these hereditary dispositions persist through environmental changes as radical as those which accompany relocation in space and technological, political and social development. in time.

Professor Boman has made a convincing case for the existence of significant differences in the manner of interpreting the world peculiar to the Hebrews and the Greeks. He peripherally makes a weaker case for such differences between the Semites and the Indoeuropeans. He merely suggests a causal analysis of those established differences. But it is interesting that he suggests a genetic, hereditary

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basis for the differences he takes such time to establish.

Our author, by implication, has a great deal to say to social theorists, and while much that he implies is admittedly speculative, so little that has been said with respect to ethnic differences is more substantially established (recognizing the general inability of investigators to devise adequate tools for the measure of ethnic difference, particularly on a sophisticated level), that his account warrants a considered hearing.

Professor Boman writes with authority and with obvious command of his material. His principal weakness seems to lie in his systematic refusal to see dynamic and teleological elements in the best thoughts of Plato and Aristotle (much of Aristotle's thought was patently teleological). He also fails to discuss the characteristically Greek thought (the essential corpuscularity of the world, its eternity, its essentially spatial character, a "natural scientific" explanation of observed phenomena, and so forth) of Epicurus and Zeno, who had manifestly Semitic affinities. (Zeno we know was a Semite).

The book affords an excellent bibliography and is provided with an adequate author index, an index of biblical references and a select index of Hebrew and Greek words.

A. JAMES GREGOR.

LOUIS AGASSIZ: A LIFE OF SCIENCE

By Edward Lurie. The University of Chicago Press, Chicago, 1960. Pp. 449. Price $7.50.

This is a comprehensive and scholarly account of the life and work of Louis Agassiz, one of the most notable naturalists of the nineteenth century. While perhaps too much of the volume is devoted to the specialized history of the "Agassiz" Zoological Museum as well as the minutiae of Agassiz' professional and social activities in this connection (the author had previously published *The History of the Museum of Comparative Zoology*), the merits of the remainder of the volume more than compensate for this minor disability. A charming and fascinating recital of Agassiz' personal life and intellectual activities makes possible an exhaustive appraisal of the character and influence of the man whose positive and negative contributions to American Science left an impact which lingers on to our own time.

Of particular interest and importance is the discussion which developes around Agassiz' intransient defence against the tide of Darwinism that characterized the last decade of his life (particularly chapter seven and pp 307, 310, 354 f., 373, 376, 382 f., 385 f.). To the reader unfamiliar with the nature of scientific controversy this account provides an invaluable insight. It has become a commonplace in the philosophy of science that "facts" alone do not deliver an intelligible "explanation" of phenomena (*cf.* pp. 282, 284). "Facts" must be lodged in a "text"—into an articulated account. ". . . facts took on meanings which differed according to the assumptions by which they were evaluated" (p. 385). Such a "text" is substantially influenced by the scientist's "personal experiences, historical ideas, religious convictions, mental habits and intimate feelings" (p. 382).

Agassiz, an accomplished naturalist, was possessed of the same facts as Darwin (p. 290). That he synthesized them in an account essentially different from that of the great advocate of evolution was the consequence of a substantially different mental "set," a different philosophic bent, a different metaphysical conviction, a different complex of personal

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experiences. Ideally, a choice between alternative hypotheses (in this case creationism and evolution) is made on the basis of theoretical simplicity (the ability more "aesthetically" or "economically" to integrate a greater body of facts) and fruitfulness (the ability to suggest verifiable experiments pertinent to the alternative theses) and its intellectual integrity (the avoidance of unexplained causes of error and mystical causes).

Since all these suggested criteria are at least in part subjective, no scientific hyphothesis should be dismissed without a considered hearing. Even in cases where an hypothesis is abandoned its negative influence can be salubrious. Agassiz' criticism of the theory of evolution necessitated a considered reappraisal of its notions of speciation (p. 297) and an explication of the mechanisms involved in the transmutation of species (p. 376), the processes of biological inheritance and its variation (p. 386). Such controversy motivates a demand for an increased body of facts (p. 337), and a critical appraisal of received fact (p. 385).

Commitment to a particular explanation of phenomena lead, on the other hand, to a tendency to loose generalization and a misinterpretation of available evidence (*i.e.*, Agassiz' erroneous interpretation of scanty geological evidence as supporting the conviction of Pleistocene glaciation in tropical South America—necessary for his account of the special creation of post-Pleistocene species—pp. 355 f.).

Finally, it is evident from Dr Lurie's account that factual considerations do not, in any ultimate or final sense, determine an *ethical* judgment. Although Agassiz was convinced that the Negroes constituted a distinct species of mankind this did not proscribe him from committing himself to the "brotherhood of man" in the "spiritual sense" (p. 261). Unfortunately, the relationship of science to ethics, religion and philosophy is incredibly intricate and few *a priori* pronouncements can be made which would simplify that relationship in particular cases.

Any assessment of a scientific explanation must be sensitive to at least the above considerations. Such an assessment requires academic consideration, cautious judgment and sensitive appreciation of opinions other than one's own.

The present volume is, in large part, the history of a controversy in natural science. It informs with respect to the facts of the case and suggests a great deal about the conduct which should govern such controversy. The volume is academically annotated, effectively indexed and possessed of an "Essay on Sources." It is recommended to all interested in an appreciation of the life of Louis Agassiz and in the history of science.

A. JAMES GREGOR.

MASKS OF MOSCOW: A HISTORY OF RUSSIAN BEHAVIOR PATTERNS

By John M. Radzinski, M.D., Regent House, Chicago 40, Illinois, 1960. Pp. 268. Price $4.50.

The author of this book is a prominent psychiatrist who has interested himself in the subject of racial and national behavioral traits. He has previously published several important scientific papers in this area in professional journals. The present work is a condensed history of the interaction between the Russian masses and their ruling classes. It is the thesis of Dr Radzinski that centuries of tyranny, oppression, and selective extermination under Mongol, Czar, and Red Commissar have shaped the Russian mind toward animal submissiveness while at the same time

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encouraging a streak of bestial cruelty. Either pole of behavior leaves a picture of dehumanization.

Many efforts have been made to correlate history, ethnic psychology, and social temperament. Cultural anthropologists who have ventured into this area have usually lacked adequate training to handle data from such diverse disciplines. Dr Radzinski's treatment is distinguished by an equal mastery of historical detail and sociopathic analysis, and thus represents a worthwhile addition to the literature of the subject. The general reader who does not share the author's enthusiasm for psychological insights may still profit from the book as a valuable review of Russian history.

Perhaps the most serious omission is the failure to evaluate the consequences of Russian isolation from Europe during the Crusades, the Renaissance, and the Protestant Reformation. These great movements had profound formative influences on the Western mind and to have remained an outside spectator must have had at least an important negative impact on the East Slavic peoples.

The political analysis of the post-World War II era in the closing chapters is particularly astute. Though it contributes nothing new it is a story well worth repeating. A "Polish" viewpoint is expressed concerning some minor topics but Ukrainians, Lithuanians, and Byelorussians will find nothing in the book to revive rancorous animosities.

This book is highly recommended.

R. E. KUTTNER.

DIALECTICAL MATERIALISM: A HISTORICAL AND SYSTEMATIC SURVEY OF PHILOSOPHY IN THE SOVIET UNION

By Gustav Wetter. Translated from the German by Peter Heath. Praeger, New York, 1958. Pp. 609. Price $10.

This volume, an expanded and eminently well translated edition of the German (*Der Dialektische Materialismus*, Vienna, Herder, 1952) and Italian (*Il materialismo dialettico sovietico*, Turin, Einaudi, 1948) versions, is the most competent single work dedicated to a systematic exposition of the philosophy of contemporary Marxism.

The author provides a brief but authoritative account of the philosophic work of Marx and Engels, and then an exhaustive and informative survey of Marxist thought in Russia. The historic survey of Soviet philosophical Marxism is followed by an interpretive exposition and critical analysis of unparalleled merit.

For our purposes here, the author's documented account of the "partisan character of philosophy" (pp. 268-274) is of particular significance. Soviet philosophy is characterized by "the demand for partisanship . . . for the exercise of party spirit in philosophical activity" (p. 268). In Part II, Chapter V, the influence of this "partisanship" is systematically considered. The "party spirit" casts its malevolent shadow over disciplines as diverse as quantum physics (pp. 406-415), chemistry (pp. 432-436), biology (pp. 451-469), anthropology and psychology (469-487).

Wetter's account can be supplemented by references to discussions which have agitated the intellectual atmosphere in the Soviet Union during the immediate past. F. V. Konstantinov, who figured for a brief period as Chief Editor of *Voprosy filosofi* (pp. 233 f.), attempted to rescue at least natural science from the trammels of the "party spirit" by insisting that its very nature made it "apolitical" (*cf.* Konstantinov, *Basis and Superstructure*, Moscow, Foreign Languages, 1955, p. 19). Konstantinov was not

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only relieved of his editorship, but his pronouncements were so qualified as to restore the natural sciences once more to their station subordinate to the "class interests of the proletariat" (*cf.* the collective work *Osnovy Marksistskoj Filosofi*, edited by Konstantinov: Spanish edition, *Los fundamentos de la filosofia marxista*, Mexico, D.F., Grijalbo, 1959, p. 529, n. 1; and I. M. Bochenski, *Die dogmatischen Grundlagen der sowjetischen Philosophie*, Dordrecht, Reidel, 1959, p. vi).

This volume is absolutely essential to all who would understand Soviet Marxism as a philosophical system. More specifically, it provides a telling indictment of a system of thought which would make science the handmaiden of political expediency.

A. JAMES GREGOR.

RAZAS Y RACISMO EN NORTEAMERICA

By Manuel Fraga Iribarne. Ediciones Cultura Hispanica, Madrid, 1950. Pp. 98. Price 20 petetas.

Although little more than a survey of contemporary race relations in the United States, this pamphlet provides the reader with an insight into the social thought of contemporary Spain. The pamphlet is an indictment of the racism of the recent past, and more significantly, indignantly critical of the racism which characterizes much of the contacts between races and ethnic groups in North America. Needless to say, such pronouncements do not accord themselves well with the popular conception of "fascist" social theory—which would suggest either that the conception of a single "fascist" race theory, espoused by as disparate a collection of political movements as the National Socialist Party of Germany, the Partito Nazionale Fascista of Italy and the Falange of Spain, is by and large the product of individual and collective fancy, or that Spain does not represent fascism in this sphere at all. Of the two possibilities, the former seems to be the case (*cf.* this reviewer's "National Socialism and Race," *European*, July, 1958, and "Sozialtheorie im faschistischen Italien," *Sociologus*, II, 1, 1961).

There are, in the text, some rather trifling errors: on page 27 we are told that the Emancipation Proclamation of the First of January 1863 freed "all the slaves" while as a matter of fact it freed only those slaves in states in active rebellion against the Federal Government—the manumission of all slaves was accomplished only with the Thirteenth Amendment to the federal Constitution; on page 34 the fundamentalism of the South is described as "primitive puritanism" which is hardly the case; on page 10 Ludwig Gumplowicz and Oswald Spengler are lumped together with the orthodox racists of the caliber of Gobineau and Hans F. K. Guenther—a classification that could hardly be supported in fact. But in general the account is a competent description of prevailing circumstances. The author is well informed and commendably accurate.

The principal shortcoming seems to arise from too narrow an economic or social interpretation of racial antagonism: the author quotes with approval, "There is no doubt . . . that racial prejudice is predominantly due to social and economic causes" (p. 27, n. 1; *cf.* p. 27 and his "Razas y racismo," *Cuadernos Hispanoamericanos*, March-April, 1950, p. 225). There is ample evidence that almost all social animals evince analogous avoidance patterns in out-group relations.

An interesting feature of the exposition is its presentation against the background of Roman Catholic moral theory (*cf.* pp. 94-98 and "Razas . . ." *op. cit.*, p. 216).

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While Professor Fraga Iribarne is here largely concerned with informative exposition, he elsewhere (in his essay "Razas y racismo," cited above) provides suggestive insights into what he calls the "authentic racial myth" or "faith" of Hispanic civilization. In that account the ultrademocratic myth" of absolute equality is abjured as explicitly as the pessimism of "biological aristocratism" ("Razas . . . ," *op. cit.*, p. 236), and R. B. Dixon's dictum that "there is a difference among human types which is fundamental in quality, in fundamental capacity, in morality . . ." is accepted with limitations, while "race" is conceived as "not only a factor, but a *factotum* of social phenomena" (*ibid.*, p. 237).

It is obvious that the concept "race" is employed by the author in a singular but not illegitimate fashion. It is conceived as a concept other than strictly zoological, as a concept as broad as human society itself. It is hoped that Professor Fraga Iribarne takes occasion to develop this theme more fully in some subsequent publication.

A. JAMES GREGOR.

CULTURE IN HISTORY: ESSAYS IN HONOR OF PAUL RADIN

Edited by Stanley Diamond. Published for Brandeis University by Columbia University Press, New York: Oxford University Press, 1960. Pp. 1014. Price $15.

This volume of over fifty essays was prepared as a tribute to Paul Radin on his 75th birthday; he did not live to receive the honor. The contributions range over the entire spectrum of activity in cultural anthropology. For this reason a detailed review is not possible.

The book is in five sections: (1) concepts of primitive peoples and the primitive intellectual; (2) contributions on culture; (3) religion, ritual, and myth; (4) history, social theory, and law; (5) linguistic developments. Readers with specialized interests naturally will regard different sections and articles on different scales of importance. While perhaps one quarter of the essays are on minutiae, only three or four are obviously trivia.

There are two articles on the Winnebago Indian prehistorical period, and another on Winnebago myths. This tribe was a major interest area of Radin. Over one third of the articles have reference to American Indians, a consequence of the preponderance of American contributions. Polynesia, India-Southeast Asia, and Africa are each represented by three or four articles. Two essays are devoted to Hebrew and Christian thought, two are focused on Marxian views of history and primitive law, and three deal with Greek myths, including the Platonic fable of the perfect State. Classical ethnology appears only in a single survey, that of Evans-Pritchard on the tribes of Sudan.

Contributions of unusual interest include one by Wilson Wallis, showing possible culture diffusion from Classical and Indo-Iranian regions into Southeast Asia and the Pacific Islands, an essay by Morris Swadesh on parallels between Aryan and Amerindian languages, a review by Mary Haas of the evidence now linking the Algonkian languages, the most widespread North American linguistic family, to Gulf and Pacific Coast tongues. An excellent essay by Thalia Howe, in the Jane Harrison tradition, traces a Greek myth to its pre-Homeric archetype.

An article by Robert Lowie stresses the importance of objectivity in the study of alien societies. Though this has become by now almost a routine admonishment, the essay has special merit in that instead of

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appealing for understanding of primitive groups, it applies the relativist dictum to modern denominations, institutions, and societies. Lest the reader feel that none of the contributors are "objective" on the subject of Paul Radin, an analysis by David Bidney demonstrates that Radin's notions on primitive monotheism underwent several contradictory changes during his long career.

The volume begins with an appreciation of Radin and ends with his published bibliography. Between the uninspired dross of a few articles, and the airy vagueness of some theoretical speculations, there remains a solid body of substantial and stimulating contributions that makes this volume a valuable addition to the libraries of social anthropologists and experts in related disciplines.

ROBERT E. KUTTNER.

ESSENTIAL TREMOR: A CLINICAL AND GENETIC POPULATION STUDY

By Tage Larsson and Torsten Sjögren, with the assistance of Göta Petersson. Ejnar Munksgaard, Copenhagen, 1960. Pp. 176. Price 30 Kroner.

This monograph constitutes another substantial study conducted by the Department of Psychiatry of the Caroline Institute in Stockholm. It is not only a study of a specific disorder, essential tremor, as a genetic entity, but also provides invaluable insight into the origin, nature and pattern of distribution, in an isolated population, of a localized gene mutation (*cf.* p 13). It was possible, because of the special circumstances which prevailed with respect to the study, to establish that the incidence of essential tremor was the consequence of autosomal (non-sex linked), monohybrid dominant inheritance (*cf.* pp. 12, 119, 122, 141, 146 f., 149). The source of the disability which now afflicts 8-9% of the inhabitants of the Western parish-register district of an ecclesiastical parish in Västerbotten, Sweden, was traced with a convincing degree of plausibility to a single ancestral couple (pp. 147 f.). Of the 210 cases studied it was possible to fix with exactitude the origin of the deficit (with but two exceptions) to dominant heredity from four couples who were born in the second half of the seventeenth century (p. 146).

The wide dissemination of the disorder apparently did not result from differential fertility or other selection favoring its distribution. Its high incidence is to be ascribed to chance variations during the period when population was sparse.

This study is suggestive in many ways. It provides what seems to be an irrefutable argument for increased eugenic vigilance, and it further suggests how local hereditary variations are disseminated throughout an isolated population in the natural process of race formation.

The text is appended by a pedigree chart indicating the pattern of inheritance as well as data providing a detailed account of the individuals studied.

This monograph constitutes an important addition to the body of genetic population studies. It is professionally impeccable, carefully written and fastidiously documented.

A. JAMES GREGOR.

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LA SCIENCE DE LA RICHESSE

By Corrado Gini. Norges Handelshöyskole, Bergen, 1960. Pp. 30.

This brochure provides a brief discussion of "Chrematology," the science of wealth. Perhaps its most interesting feature is the author's discursive suggestions concerning the "biological factors in the evolution of wealth" (pp. 12-14). A cursory discussion of the "parabolic biological trend" which characterizes the history of human races is tendered (a more exhaustive treatment is to be found in his *I fattori demografici dell'evoluzione delle nazioni*, Turin, 1912, *Nascita, evoluzione e morte delle nazioni*, Rome, 1930, and *Demographie et Sociologie*, Istanbul, 1952). The racial components which enter into the composition of various civilizations are conceived as materially influencing their historical socio-cultural fluctuatons.

This suggestive account is interesting particularly because its author enjoys an international reputation as one of the world's most distinguished sociologists.

A. JAMES GREGOR.

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